THE IRON TRADE REVIEW

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# New Business Follows Price Readjustments

## Ore Freight Rates on the Vermillion and Mesabi Ranges Reduced — Wire Cut $1.00 a Ton

The reduction in ore freight rates on the Vermillion and Mesabi ranges, which will shortly become effective, is of far-reaching importance to producers and consumers of iron and steel products. A readjustment of ore prices for 1912 delivery will necessarily follow. The decline in the ore rate amounts to from 40 to 80 cents on the ore required for a ton of pig iron. A flat rate of 60 cents a ton has been made on both ranges. While ore hauled at the former rates will largely be used in the manufacture of iron to be made during the next 12 months, nevertheless, iron consumers will not be slow to claim, at as early a date as possible, that they should have the benefit of this decline in the cost of manufacture. An interesting point in this connection is the effect of these reductions on the differential between old and new range ores. The differential between old range Bessemer and Mesabi Bessemer was 85 cents in 1893, 40 cents in 1894, 75 cents in 1895, 50 cents in 1896, 1898 and 1903, 35 cents in 1897, 60 cents in 1899, $1 in 1900, 1901 and 1902, and 25 cents each year since 1904. The question naturally arises whether the differential will remain as at present or will be increased on account of the new freight rate. It is possible that the ore rates on the old range will also be reduced, although these are more reasonable than those which have long prevailed on the Mesabi and Vermillion ranges. The disposition of the Hill ore lands, in view of the announcement that the United States Steel Corporation will surrender its lease in 1915, has aroused considerable speculation, but no definite action is anticipated for some time. The Pittsburgh Steamship Co.'s ore shipments this year will not exceed 18,000,000 tons, a decline of about 4,000,000 tons from last year's record.

**Finished Material**

The prices of many finished products continue to approach the cost of manufacture and the keen competition for business has brought out quotations equivalent to a Pittsburgh basis of 1.05c for bars and 1.15c for plates. In the Chicago district, steel bars on desirable specifications for immediate shipment have sold at 1.28c, mill, but on contracts involving extended deliveries an advance of $1 per ton is asked. Bar iron is showing some resistance, but the pressure of the market has been sufficient to effect a further decline. The Carnegie Steel Co. has booked 4,800 tons of ship plates and has closed 7,000 tons of plates for steel car manufacture. The reduction of $1 on wire products is merely an open recognition of the shading that has been been done quietly by some manufacturers for several weeks.

**Pig Iron**

Foundries are taking iron freely and, in general, stocks in the hands of consumers are at a minimum. Current sales are limited largely to small lots to cover immediate requirements only. In the Pittsburgh district, considerable shading has been reported and a sale of 6,500 tons of basic and malleable Bessemer at approximately $12.50, valley furnace, is noted. In the east, No. 2 foundry iron prices fall within the range of $15 to $15.25, delivered. A Delaware river pipe maker purchased 3,000 tons of forge iron at $14.75, delivered, and an eastern steel works continues to carry on negotiations for approximately 10,000 tons of basic for the first quarter.

**Structural Material**

Mills in the various centers seem to be more inclined to make prices according to their individual circumstances, and there is evidence that some business has been closed at 1.33c, Chicago, covering beams and channels up to 15 inches. In the east, a disposition is also noted to quote according to the desirability of the order, but in spite of the low prices prevailing, the placing of fabricating contracts has not been materially stimulated.

**Railroad Material**

The Central Railroad of Georgia is negotiating for 30,000 tons of rails, and the Wyandotte Construction Co. has placed a contract for 7,500 tons with the Illinois Steel Co. Some of the larger western railroads are considering their 1912 requirements, although no definite advances have been made to the manufacturers. More car buying is reported. The Pressed Steel Car Co. has taken 500 tank cars for the Union line and 100 gondolas for the Texas & Pacific. The Southern railroad is inquiring for 550 cars and the American Car & Foundry has received an order for 600 steel underframes from the American Refrigerator & Transit Co. Heavy buying of line pipe continues, and numerous large orders have been placed during the past few days.

# WORLD'S IRON MARKETS

## PITTSBURG

### Steel Bars and Plates Again Decline —Car Orders.

Office of THE IRON TRADE REVIEW,
2148-49 Oliver Bldg., Oct. 24.

Taken as a whole, orders for steel products this month compare favorably with those of the same period last month. In semi-finished steel, mill orders exceed those of September, due largely to the fact that the larger users are gradually increasing stocks at today's price level. Fewer structural lettings are reported and competition for steel bars and plates has developed still lower prices. On recent sales, if figured back to a Pittsburgh basis, a price of 1.05c, Pittsburgh, was made on steel bars, but this price is exceptional. On the same basis, plates have sold as low as 1.15c. Hopes of improvement in the steel market are based on the expected buying on the part of the railroads. Some car orders have been placed and low prices on steel products and a threatened car shortage are expected to result in additional awards in the near future. The New York Central is reported to have placed some orders for cars. The Pressed Steel Car Co. has received orders for 500 tank cars for the Union Tank Line; 100 gondolas for the Texas & Pacific and some additional passenger coaches for the Pennsylvania. The 7,000 tons of plates for the tank cars will be rolled by the Carnegie Steel Co., which has also received a contract for 4,800 tons of plates for two boats to be built by the American Ship Building Co., and an order for 5,000 tons of structural steel to be used in the Pennsylvania railroad grade crossing elimination work at Cleveland. Several fairly large orders for iron and steel line pipe have been placed. The important development of the iron market was the sale of 6,500 tons of basic and malleable at $12.50, valley, a reduction of from 60 to 75 cents a ton on malleable. Reports that a new price card on wire products became effective this morning are not correct. The market, however, is weaker, and $1.60, Pittsburgh, on wire nails is now quite general. The Carnegie Steel Co. is operating about 80 per cent of its ingot capacity. Investigation shows that stocks in consumers' hands are exceedingly low, and a large part of current tonnage is to replenish depleted stocks.

**Pig Iron.**—The most important recent development was the sale of approximately 6,500 tons of basic and malleable pig iron by a valley furnace; the basic was sold at $12.50, while the malleable was disposed of at $12.50 to $12.75, valley. Sales of malleable were reported last week at $13.25, valley. There is a little more inquiry for malleable for both prompt and forward delivery, but no important sales of basic have been made. The Bessemer market is very quiet and the general asking price is $14.50, valley. The general asking price for the general asking price is $14.50, valley. The general asking price for foundry iron is $13.50, valley, and some sales have been reported at this figure. On one sale of 500 tons of No. 2 foundry, a quotation of $13.25, valley, was made, this being the largest transaction in two or three weeks. Reports of lower prices have not been confirmed. A number of furnaces which carried heavy stocks of foundry iron in August and September, are now practically bare, as consumers have been taking shipments in a very satisfactory manner. The furnace of the Clinton Iron & Steel Co., of this city, will probably be blown in next week, and the Girard furnace will resume operations in a few days. Demand for forge iron is light. An Ohio interest has asked for bids on 1,000 tons of foundry iron for first half delivery. We quote the market as follows:

(Prompt Shipment.)

| | |
|---|---|
| Bessemer, valley | $14.50 |
| Bessemer, Pittsburgh | 15.40 |
| Basic, valley | 12.50 |
| Basic, Pittsburgh | 13.40 |
| No. 2 foundry, Pittsburgh | 14.15 |
| Gray forge, Pittsburgh | 13.65 |
| Malleable, Pittsburgh | 13.40 |

(Fourth Quarter.)

| | |
|---|---|
| Bessemer, valley | $14.50 |
| Bessemer, Pittsburgh | 15.40 |
| Basic, valley | 12.50 |
| Basic, Pittsburgh | 13.40 |
| No. 2 foundry, Pittsburgh | 14.40 |
| Gray forge, Pittsburgh | 13.65 |
| Malleable, Pittsburgh | 13.65 |

**Ferro-Alloys.**—Recent trading in ferro-manganese for first half shipment at $37.50, Baltimore, has brought out considerable inquiry from the west and a large tonnage is now under negotiation. In addition to the sales reported recently, several carloads have been sold for prompt shipment at $36.75, Baltimore. There is little demand for ferro-silicon.

We quote ferro-manganese at $36.75 to $37 Baltimore, for prompt shipment, and at $37.50 to $38.50, Baltimore, for forward delivery. The freight rate from Baltimore to Pittsburgh is $1.95 per ton.

Fifty per cent ferro-silicon is quoted at $59 to $60, Pittsburgh, for prompt and forward delivery; 12 per cent, $24; 11 per cent, $23; 10 per cent, $22, f. o. b. Jackson, Jisco and Ashland furnaces. The freight rate to Pittsburgh is $1.90. The foreign grades are held at $1 or more a ton over domestic prices.

**Plates.**—The Pressed Steel Car Co. has received orders for 500 tank cars for the Union Tank Line, 100 gondolas for the Texas & Pacific railroad and a small order for additional passenger coaches for the Pennsylvania railroad. The 7,000 tons of plates for the tank cars will be furnished by the Carnegie Steel Co., which has also received an order for 4,800 tons of ship plates from the American Ship Building Co. It is expected that the Baltimore & Ohio Railroad Co. will take action in the very near future on its inquiry for 4,500 freight cars. There is a large amount of car business under active negotiation. While some low prices on plates have been made, 1.20c, Pittsburgh, is regarded as the market level at present. Plates are quoted as follows:

Tank plates, ¼ inch thick, 6¼ to 100 inches, 1.20c. Extras are as follows, per 100 pounds: Boiler and flange steel plates, 0.10c; A. B. M. and ordinary firebox steel plates, 0.20c; still bottom steel, 0.30c; marine steel, 0.40c; locomotive firebox steel, 0.50c; all sketches excepting straight taper plates varying not more than 4 inches in width at ends, narrowest end being not less than 30 inches, 0.10c; circles, 0.20c. Plates in widths over 100 inches up to 110 inches, 0.05c; over 110 inches up to 115 inches, 0.10c; over 115 inches up to 120 inches, 0.15c; over 120 inches up to 125 inches, 0.25c; over 125 inches up to 130 inches, 0.50c; over 130 inches, 1c. Gages under ½ inch to and including $\frac{7}{16}$-inch plate on thin edge, 0.10c; under $\frac{7}{16}$ and including No. 9, 0.25c. Five cents extra for less than carloads. Terms net cash in 30 days.

**Sheets.**—There has been no material change in the sheet market. Speci-

fications are being received at about the same rate as last month and new business is fair. Manufacturers continue to quote f. o. b. mill, instead of the usual basing point and quotations of 1.85c, Pittsburgh, on black sheets, No. 28 gage, and 2.85c, Pittsburgh, on galvanized sheets, No. 28 gage, are more general. Some of the independent mills are assured steady operation during the next few months, a few plants running practically full. On account of the low prices, some buyers are showing more interest in next year's requirements, but comparatively little tonnage has thus far been booked.

We quote the market as follows:

Blue annealed sheets No. 10 gage, 1.40c; black annealed sheets No. 28 gage, 1.85c to 1.90c; galvanized sheets, No. 28 gage, 2.85c to 2.90c; painted roofing sheets, $1.30 per square for No. 28 gage, 2½-inch corrugation; galvanized roofing sheets, $2.50 per square for No. 28 gage, 2½-inch corrugation f. o. b. makers' mill.

**Tin Plate.**—While it is too early to ascertain the effect of the recent cut in tin plate on buying for next year, some fairly heavy contracts have been placed by the larger buyers. As a result of the $6 reduction from the so-called official price established Feb. 3, 1911, both manufacturers and buyers believe that the bottom has been reached. As this is the off season for tin plate, bookings this month for both prompt and forward delivery have been light. We quote the market as follows:

Coke tin plate, 100-pound basis, 14 x 20, $3.40 f. o. b. mill, Pittsburgh district.

**Rails and Track Material.**—Thus far, no large inquiries for standard rails for 1912 delivery have been made. The rail mills have succeeded in maintaining a fair operating schedule during the month, as a result of moderate buying in small lots for immediate rolling. The leading interest, during the week, booked several thousand tons of standard sections, the largest order involving 2,000 tons for a western road. There is a fair demand for light rails. We quote the market as follows, the base price on open-hearth steel rails being 1.34c per pound at the mill:

Fifty-pound and heavier, 1.25c per pound; carloads and less than 500 tons, 1.34c per pound; light rails on base weight of 40 to 45 pounds, 1.16c, the schedule on the other weights being irregular and subject to negotiations; angle splice bars for standard sections, 1.50c, Pittsburgh; track bolts, 2.20c to 2.25c, Pittsburgh.

**Railroad Spikes.**

| | |
|---|---|
| 4½, 5 and 5½ and 9/16 | $1.40 |
| 3, 3½, 4, 4½ and 5 x ½ | .10 |
| 3½, 4 and 4½ x ⅞ | .20 |
| 3, 3½, 4 and 4½ x ⅜ | .30 |
| 2½ x ¾ | .40 |
| 2½, 3 and 3½ x ⅞ | .60 |
| 2 x ⅞ | .80 |

**Steel.**—One encouraging feature of the semi-finished steel market is that buyers generally, realizing that prices are low, are increasing their stocks. About the middle of the year, when a reduction in prices was announced, stocks were reduced to a minimum and during the past three or four months buying has been only for urgent needs. Two or three companies in this territory report that mill orders for billets and sheet bars, so far this month, are in excess of those of the same period in September, and that the tonnage record for October will show a gain over last month. The Carnegie Steel Co. and one or two independent manufacturers are operating their billet and sheet bar mills at practically their full capacity. Prices are unchanged, but comparatively few companies are quoting strictly on a Pittsburgh basis. We quote the market as follows:

Bessemer 4 x 4 billets with 0.25 carbon and less are quoted at $20, with the usual extras for size and analysis, and open-hearth rolling billets, $19; Bessemer sheet and tin bars are quoted at $21, and open-hearth sheet bars are quoted at $20, f. o. b. maker's mill, with full freight to destination added. Forging billets are quoted at $24 to $25, Pittsburgh.

**Hoops and Bands.**—This market continues quiet. On hoops, 1.35c, Pittsburgh, has been shaded slightly. A few mills have also shaded 1.15c, Pittsburgh, on bands. We quote the market as follows:

Hoops in carload lots, 1.35c, Pittsburgh; in less than carload lots, 1.45c; bands, 1.15c, base, with net extras, as per standard steel.

**Merchant Bars.**—Recent bookings of steel bars show a slight gain as compared with a month ago, although buying has been confined largely to cover urgent needs. The policy of quoting f. o. b. makers' mill, instead of Pittsburgh, is more general and in a few instances sales have been made, which, if figured back to a Pittsburgh basis, are equivalent to 1.05c, Pittsburgh, although practically all trading is being done at 1.10c to 1.15c, Pittsburgh. In a few cases orders have been placed for forward delivery, but the total tonnage involved is comparatively small. There has been no material change in mill operations. Demand for bar iron continues light and 1.25c, Pittsburgh, has been shaded. Inquiries for shafting are slightly heavier, although still unsatisfactory. We quote the market as follows:

Common iron bars, 1.25c, Pittsburgh; Bessemer and open-hearth steel bars, 1.10c to 1.15c plow and cultivator, 1.20c; channels, angles, zees, tees, under 3 inch, 1.25c, all f. o. b. mill. The following differentials are maintained on steel. Less than 2,000 pounds of a size, 0.35c advance. Cold rolled and ground shafting, 60 and 5 per cent to 60 and 10 per cent off in carloads and 57 per cent in less than carloads, delivered in base territory.

**Muck Bars.**—Muck bar continues quiet, with no inquiry or sales of importance. We quote muck bar nominally at $28, Pittsburgh, with a premium of $1 a ton for all pig bars.

**Structural.**—The Carnegie Steel Co. received an order for the 5,000 tons of structural steel to be used in the Pennsylvania grade crossing elimination work at Cleveland. The Fort Pitt Bridge Co. was awarded the general contract for this work a few weeks ago. Fewer structural lettings are reported and some of the mills have comparatively little tonnage ahead. Competition is keen and some low fabricating prices are reported. We quote as follows:

Beams and channels, 15 inches and under, 1.20c; over 15 inches, 1.35c; zees, 1.25c; tees, 1.30c; angles, from 3 to 6 inches, 1.25c; over 6 inches, 1.35c; universal and sheared plates, 6¼ inches wide and wider, 1.25c.

**Merchant Pipe.**—Jobbers are specifying more liberally against contracts for merchant pipe and there has been a noticeable increase in specifications for oil country goods. On merchant iron and steel pipe the discounts which became effective Oct. 2, are being maintained, but keen competition is noted on line pipe and oil country goods. Orders placed during the week include 21 miles of 3-inch steel line pipe and 10 miles of 2-inch steel line pipe for western Pennsylvania delivery; five of 6 to 12-inch steel line pipe for Ohio shipment; seven miles of 12-inch steel line pipe for western shipment, and 20 miles of 2-inch and five miles of 6-inch iron line pipe. We quote the following official discounts in carload lots, subject to the usual preferential discounts to the larger buyers, merchant pipe, where specified, being offered in sizes from ⅛ to 6 inches:

**Iron and Steel Pipe Basing Prices.**

| | Steel. | | Iron. | |
|---|---|---|---|---|
| | Butt weld. | | | |
| | Black. | Galv. | Black. | Galv. |
| ¼, ⅓ inch | 73 | 53 | 68 | 48 |
| ⅜ inch | 74 | 64 | 69 | 59 |
| ½ inch | 77 | 67 | 72 | 62 |
| ¾ to 1½ inch | 80 | 72 | 75 | 67 |
| 2 to 3 inches | 81 | 74 | 76 | 69 |
| | Lap weld. | | | |
| 2 inches | 77 | 70 | 72 | 65 |
| 2½ to 4 inches | 79 | 72 | 74 | 67 |
| 4½ to 6 inches | 78 | 70 | 73 | 65 |
| 7 to 12 inches | 76 | 66 | 71 | 61 |
| 13 to 15 inches | .. | .. | 47 | .. |
| Extra Strong, Plain Ends. | | | | |
| | Butt weld. | | | |
| ⅜, ¼, ⅛ inch | 70 | 60 | 65 | 55 |
| ½ inch | 75 | 69 | 70 | 64 |
| ¾ to 1½ inch | 79 | 73 | 74 | 68 |
| 2 to 3 inches | 80 | 74 | 75 | 69 |
| Extra Strong, Plain Ends. | | | | |
| | Lap weld. | | | |
| 2 inches | 76 | 70 | 71 | 65 |
| 2½ to 4 inches | 78 | 72 | 73 | 67 |
| 4½ to 6 inches | 77 | 71 | 72 | 66 |

| | | | | |
|---|---|---|---|---|
| 7 to 8 inches..... | 70 | 60 | 65 | 55 |
| 9 to 12 inches..... | 65 | 55 | 60 | 50 |
| Double Extra Strong, Plain Ends. Butt weld. | | | | |
| ½ inch ..... | 65 | 59 | 60 | 54 |
| ¾ to 1½ inch..... | 68 | 62 | 63 | 57 |
| 2 to 3 inches ..... | 70 | 64 | 65 | 59 |
| Double Extra Strong, Plain Ends. Lap weld. | | | | |
| 2 inches ..... | 66 | 60 | 61 | 55 |
| 2½ to 4 inches..... | 68 | 62 | 63 | 57 |
| 4½ to 6 inches..... | 67 | 61 | 62 | 56 |
| 7 to 8 inches..... | 60 | 50 | 55 | 45 |

Plugged and reamed pipe is furnished at 2 points higher price, either butt or lap weld.

**Boiler Tubes.**—Fairly liberal specifications are being received for merchant and locomotive boiler tubes, but new business is unsatisfactory and the market is only fairly firm. We quote the official discounts on steel boiler tubes, in carload lots, as follows:

| | |
|---|---|
| 1¼ to 2¼ inch..... | 65 |
| 2½ inch ..... | 67½ |
| 2¾ to 3¼ inch..... | 72 |
| 3½ to 4½ inch..... | 75 |
| 5 and 6 inch..... | 67½ |
| 7 to 13 inch..... | 65 |

To destination east of Mississippi river will be sold at delivered discount for carloads lowered by 2 points, for lengths 22 feet and under; longer lengths, f. o. b. Pittsburgh. Usual extras to jobbers and boiler manufacturers.

**Wire Products.**—Developments of the past few days indicate that $1.60, Pittsburgh, on wire nails, has been done, although some mills are reported quoting $1.65, as the minimum. Reports published today that a new price card on wire products became effective this morning are without foundation. Some mills have booked several fairly large orders for plain wire at $1.45, Pittsburgh, and are known to have rejected orders offered under this figure. While new business and specifications against contracts have been received at a slightly better rate this month, fall buying has not equalled expectations. Cut nails are quoted at $1.55, Pittsburgh. We quote as follows:

Wire nails, jobbers, carload lots, $1.60 to $1.65; retailers' carload lots, $1.70 to $1.75; cut nails (western makers), jobbers' carload lots, $1.55; painted barb wire, jobbers' carload lots, $1.65 to $1.70; retailers' carload lots, $1.80, with 30c for galvanizing; plain wire to jobbers in carloads, $1.45 to $1.50, and to dealers, in carloads, $1.55 to $1.60; polished staples, $1.70; galvanized staples, $2.

**Wire Rods.**—The demand for wire rods is limited and lower prices are expected. We quote $26, Pittsburgh, on Bessemer and open-hearth wire rods.

**Coke.**—The coke market continues quiet, but firm. Scattering sales of furnace coke for prompt shipment, aggregating about 3,500 tons, have been made at $1.50, ovens, and this appears to represent the market level. Several buyers who have been covering from month to month are expected to enter the market within the next three or four days for their November requirements. While no inquiries of importance for furnace and foundry coke for shipment next year have been made, some of the larger furnace interests are quietly sounding the market and are expected to send out formal inquiries in the near future. Coke prices for forward delivery have not been established. Consumers of foundry coke continue to take shipments against contracts in a satisfactory manner, but there has been little new buying of importance, Production has declined slightly and producers are regulating output to demand. We quote, standard Connellsville furnace coke for prompt shipment at $1.50, ovens, and for delivery over the remainder of the year, $1.60, ovens. On high grade Connellsville foundry coke, we quote from $1.90 to $2, ovens, for prompt shipment and from $2 to $2.40, for future delivery. The Connellsville *Courier's* figures for the week ending Oct. 14, showed 26,166 active ovens with an output of 310,205 tons, as compared with 26,059 active ovens and a production of 314,343 tons, the previous week.

**Old Material.**—The principal consumer of heavy melting steel at Monessen, Pa., and some other users of old material who declared an embargo against shipments about the middle of September are now taking moderate shipments against contracts, but the scrap market, as a whole, continues quiet with little encouragement as regards the outlook for the immediate future. Prices are not quotably lower, as there has not been enough trading of importance to test the market. Consumers are buying only in such quantities as are absolutely necessary, as they see no reason for covering for future requirements. We quote, gross tons, delivered in the Pittsburgh district, including Monessen, Sharon, Steubenville, Brackenridge and Follansbee, as follows:

| | |
|---|---|
| Heavy melting scrap ..... | $12.00 to 12.50 |
| Rerolling rails ..... | 12.50 to 13.00 |
| Malleable ..... | 11.50 to 12.00 |
| Bundled sheet scrap ..... | 10.00 to 10.50 |
| Iron axles ..... | 22.00 to 23.00 |
| Old iron rails ..... | 14.50 to 15.00 |
| Stove plate ..... | 9.00 to 9.50 |
| No. 1 wrought scrap..... | 12.50 to 13.00 |
| Old car wheels ..... | 12.25 to 12.75 |
| Low phosphorus ..... | 14.50 to 15.00 |
| Machine shop turnings..... | 8.75 to 9.00 |
| Cast borings ..... | 8.00 to 8.50 |
| No. 1 cast scrap ..... | 12.50 to 12.75 |

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C. W. Laughlin and H. E. Barney have organized the Laughlin-Barney Machinery Co., with headquarters in the Union Bank building, Pittsburgh, and have taken the accounts of a number of manufacturers of heavy equipment.

## CHICAGO

### Railroads Figuring on Next Year's Rail Requirements.

Office of THE IRON TRADE REVIEW,
1328 Monadnock Block, Oct. 24.

Some of the larger western railroads are considering their 1912 rail requirements, although no definite advances have yet been made to the manufacturers. It is also quite probable that some fair orders will be placed for rails for delivery before the close of this year, some roads having found that their early spring purchases were insufficient. The car market continues to be fairly active, although no new inquiries have appeared in the west. The Southern railroad is inquiring for 550 cars, which may be awarded to Mississippi valley makers, and the American Car & Foundry Co. has received an order for 600 steel underframes from the American Refrigerator Transit Co. Aside from these items there were no important developments during the week. Current buying of finished materials continues heavy and indicates that the minimum requirements of the country are enormous. The disposition on the part of western manufacturers to quote prices regardless of eastern basing points is becoming more evident. On account of this tendency, steel bars have sold for 1.28c, Chicago, and plates and structurals have been offered at 1.33c, f. o. b., makers' mill. Low prices on plain material do not seem to stimulate the placing of fabricating contracts and those reported last week will require only 2,656 tons of plain material. Prices in the local sheet market continue ragged and the mills are finding more difficulty in obtaining a satisfactory volume of business. Wire prices have been reduced $1.00 a ton uniformly to correspond with the base price of 1.65c, Pittsburgh, on wire nails. There is a fair amount of scrap moving, but the market is still declining.

**Pig Iron.** — Foundries are taking iron freely and, in general, stocks in the hands of consumers are at a minimum. Current sales have shown some improvement during this month and in most cases the tonnage booked during October exceeds that taken during the entire month of September. On account of generally slow conditions, the market shows no improvement in prices. On southern, No. 2, several furnaces will quote $14.35, Chicago, for first quarter delivery and in one or two instances this price has been offered to cover the entire first half. The market for southern iron for the first half, however, may be more fairly quoted at $14.60, Chicago, equivalent to $10.25,

Birmingham. There is evidence of one or two sales of southern iron for prompt shipment and immediate payment at $9.75, Birmingham, but this can hardly be considered representative of market conditions.

Low prices have recently been made on high silicon iron and the Chicago market for 5 per cent southern silveries may be fairly quoted at $15.60, while $17.40 is being freely made on Jackson county and Kentucky 8 per cent silicon irons.

Inquiry is light, although most buyers are willing to consider propositions when approached. The consumer's ideas regarding prices, particularly for future shipment, do not agree very well with those of the furnace interests. We note a sale of 1,000 tons of No. 2 southern iron at $10, Birmingham, for delivery over the balance of this year and until March 1, 1912. A South Chicago foundry is in the market for 600 tons of southern No. 2 for first half delivery.

The following prices represent the market for Chicago delivery, except northern foundry No. 2 and malleable Bessemer, made in local furnaces, which are quoted f. o. b. furnace.

(Shipment this year.)

| | |
|---|---|
| Lake Superior charcoal | $17.00 |
| Northern foundry No. 2 | 14.50 |
| Southern foundry No. 2 | 14.35 |
| Southern silveries, 5 per cent silicon | 15.60 |
| Jackson Co. silveries, 8 per cent | 17.40 |
| Malleable Bessemer | 14.50 |
| Alabama basic | 14.35 |

**Billets.**—There continues to be a moderate demand for forging billets, which can be easily taken care of by the local mills. Western makers are quoting independent of the eastern market. We quote, open-hearth forging billets, $25 to $26; re-rolling billets, $22, Chicago.

**Merchant Bars.**—Specifications and current orders for merchant steel showed a slight falling off during the past week. Low prices are the rule and each mill is making prices according to its own geographical position, without much regard to the Pittsburgh base. On desirable specifications for immediate shipment, steel bars have sold for 1.28c, Chicago, which price seems destined to become rather common in this market. On contracts involving extended delivery, the makers are asking $1 a ton more. While the demand for reinforcing material is fair, it is not sufficient to sustain the price of rerolled steel bars, which has been cut recently to 1.18c on desirable business. Bar iron is showing some resistance, but the pressure on the market was sufficient to force prices half a cent lower last week, bringing them down to 1.17½c, Chicago. This price is not general and will be made only where the credit and tonnage requirements of the purchaser are satisfactory. Sellers of shafting report satisfactory specifications with a slight increase in new business.

We quote, Chicago delivery, as follows:

Bar iron, 1.17½c to 1.23c; hard steel bars, rerolled, 1.18c to 1.23c; soft steel bars and bands and small shapes, 1.28c to 1.33c, base; hoops, 1.53c to 1.58c; smooth finished machinery steel, 1 inch and larger, 1.78c. Shafting 60 per cent off list for carload lots, 57 per cent off for less.

On iron and steel from local stock, we quote as follows:

Bar iron, 1.55c to 1.65c per pound base; soft steel bars, 1.55c to 1.65c per pound base; soft steel hoops, 1.80c to 1.90c, full extras.

**Structural Material.**—Local mills are becoming more and more inclined to make prices according to their individual circumstances and to establish a purely local market. There is good evidence that some business in plain material has been done at 1.33c, Chicago, covering beams and channels under 15 inches. These low prices do not seem to stimulate the placing of fabricating contracts, which remain light. Contracts reported in the west last week total only 2,656 tons, divided into nine small lots. The most important of these was for 810 tons, taken by the Morava Construction Co., Chicago, for the Citizens' Bank building, at Tampa, Fla. On a revised design, prepared by the McClintic-Marshall Construction Co., Thomas H. Day's Sons, San Francisco, have been awarded a general contract, 527 tons, for a structural steel shop and loft building for the Union Iron Works, San Francisco. The steel work will be executed by the McClintic-Marshall Construction Co. The American Bridge Co. has taken 284 tons from the Oregon Electric Railway Co. for two deck plate girder spans and 289 tons from the St. Joe Tanning Co., St. Joe, Mo., for a roof over a new building. The American Steel & Wire Co. has let a contract for a 50,000-gallon tank on a 100-foot tower; this will require 174 tons of steel. The Brunet Falls Mfg. Co., Eau Claire, Wis., has ordered 104 tons of structural material. Other structural contracts reported in this market are as follows: Two towers for cable supports for the Santa Cruz Portland Cement Co., Santa Cruz, Cal., 133 tons, to Dyer Bros; penstock for power plant, Beaver River Power Co., near Bliss, Lincoln Co., Idaho, 162 tons, to Minneapolis Steel & Machinery Co., and Medical Library, San Francisco, Cal., 163 tons, let by Lewis A. Hicks Co. to the Central Iron Works.

We quote, structural material, f. o. b. Chicago, as follows:

Beams and channels, 15 inches and under, 1.33c to 1.38c. For extras, see Pittsburgh report.

Plain material out of store is as follows:

All angles, 3 inches and larger, including 6 inches, $1.65 to $1.75 per 100 pounds; angles over 6 inches, $1.75 to $1.80 per 100 pounds, base; beams, 3 to 15 inches, inclusive, $1.65 per 100 pounds, base; channels, 3 inches and larger, $1.65 per 100 pounds, base.

**Rails and Track Fastenings.**—Some of the larger western railroads are considering their 1912 requirements and also, there is evidence that in certain instances the purchase of further rails and track material for delivery this year is under discussion. Most western roads bought sparingly for 1911 delivery and some are finding that their contracts were not sufficiently heavy to take care of even the curtailed maintenance requirements that are the order of the day. Specifications for track supplies are fair. It is reported in this market that the Central Railroad of Georgia has ordered 30,000 tons of 90-pound rails from the Tennessee Coal, Iron & Railroad Co.

We quote, light rails, f. o. b. Chicago, and track fastenings, f. o. b. Joliet, as follows:

Light rails, carloads, 40 to 45-pound, 1.16c to 1.20½c; 30 to 35-pound, 1.19½c to 1.24c; 16, 20 and 25-pound, 1.20½c to 1.25c; 12-pound, 1.25c to 1.29½c.

Light section relayers, 45 pounds and under, subject to inspection, $21 to $23; standard section relaying rails, subject to inspection, $23.50 to $24.

Track fastenings, f. o. b. Joliet, angle bars, 1.50c to 1.60c; railroad spikes, 1.60c to 1.70c; smaller size spikes, 1.70c, base; track bolts with square nuts, 2.10c, base.

**Plates.**—Although western mills are fairly well supplied with business for the time being, prices show no firmness, and the week under review witnessed some new low quotations. In common with other finished materials, the local mills are inclined to disregard the Pittsburgh basing point in fixing their prices on plates, which makes them appear very low when referred back to the Pittsburgh market. Sales of tank plates in base sizes have been made recently at 1.33c, Chicago, and this quotation is rather common on desirable tonnage for prompt shipment, although makers continue to get 1.38c on a considerable volume of their business. The Southern railway is making inquiries for 500 all-steel, 50-ton, drop-bottom, gondola cars and 50 all-steel underframe, 30-ton, ventilated

box cars. The American Refrigerator Transit Co., St. Louis, has ordered 300 steel underframes for reinforcing refrigerator cars from the American Car & Foundry Co.

We quote, mill prices, f. o. b. Chicago, as follows:

Tank plates, ¼ inch thick, 6¼ to 100 inches wide, 1.33c to 1.38c. For extras, see Pittsburgh report.

Store prices are as follows:

Tank steel, ¼ inch and heavier, up to 72 inches wide, 1.65c.

**Sheets.**—Prices in the local sheet market continue ragged and the mills are finding more difficulty in obtaining a satisfactory volume of business. The local independent mill has curtailed its operations to some extent and is now running about 80 per cent of its capacity. It is interesting to note that with spelter up to its average price during 1907, galvanized sheets are now selling at $15 a ton under the quotations which prevailed during that year. This would seem to indicate that the prices of the lighter finished materials have suffered more severely than some other lines.

We quote, store prices, f. o. b. Chicago, as follows:

For mill prices, see Pittsburgh report. Freight to Chicago, 18 cents.

Blue annealed, No. 10, 1.95c; No. 12, 2.05c. Box annealed, No. 28, 2.40c. Galvanized, No. 28, 3.35c.

**Wire Products.**—The demand for agricultural wire and fencing remains very satisfactory. Nails continue to be somewhat slow and industrial lines are not absorbing their full quota of the output. Prices in the western market have been reduced $1 a ton uniformly, to correspond with the base price of 1.65c, Pittsburgh, on wire nails. While some business is being taken at a slightly higher quotation, these figures represent the bulk of the tonnage now coming to the mills. Local wire mills are running about 75 per cent of their capacity.

We have revised our prices and quote, f. o. b. Chicago, as follows:

Wire nails, jobbers, carload lots, $1.83; retailers' carload lots, $1.88; retailers' less than carload lots, $1.98; painted barb wire, jobbers' carload lots, $1.83; retailers' carload lots, $1.88; retailers', less than carload lots, $1.98, with 30c for galvanizing; plain wire to jobbers, $1.63; plain wire, retailers' carload lots, $1.68.

**Merchant Pipe and Tubes.**—The market for boiler tubes is more or less irregular, although specifications against contracts are showing a slight improvement. Jobbers are buying merchant pipe rather freely and current prices are fairly well maintained. The local demand is moderately heavy. A discount of 67½ per cent has been announced on lap welded steel tubes, 3½ to 4½ inches in diameter, out of stock, Chicago. For the same sized tubes made of charcoal iron, the discount is 50 per cent and seamless tubes are 46 per cent. Five and 6-inch lap welded steel tubes are now quoted 55 per cent.

We quote, merchant pipe and tubes, f. o. b. Chicago, as follows:

**Iron and Steel Pipe Basing Prices.**

| | Steel. | | Iron. | |
|---|---|---|---|---|
| | Black. | Galv. | Black. | Galv. |
| ⅛-¼ inch | 70.2 | 49.2 | 63.2 | 41.2 |
| ½ inch | 74.2 | 63.2 | 66.2 | 56.2 |
| 2 in. to 3 in. | 78.2 | 70.2 | 72.2 | 64.2 |
| 4½-6 inches | 75.2 | 66.2 | 69.2 | 60.2 |
| 7-12 inches | 72.2 | 61.2 | 67.2 | 56.2 |
| Extra Strong Plain Ends. | | | | |
| ½ inch | 71.2 | 64.2 | 54.2 | 52.2 |
| 2-3 inches | 76.2 | 69.2 | 61.2 | 55.2 |
| 7-8 inches | 66.2 | 55.2 | 59.2 | 47.2 |
| Double Extra Strong. | | | | |
| ½ inch | 59.2 | 51.2 | .... | .... |
| 2-3 inches | 64.2 | 56.2 | .... | .... |
| 7-8 inches | 54.2 | 42.2 | .... | .... |

**Tubes.**

| | Lap weld steel. | Charcoal iron. | Shelby seamless. |
|---|---|---|---|
| | Per cent. | Per cent. | Per cent. |
| 1 inch | 39 | .. | 57½ |
| 1¼ to 2¼ inch | 55 | 40 | 35 |
| 2¾ to 3¼ inch | 65 | 50 | 46 |
| 3½ to 4½ inch | 67½ | 50 | 46 |
| 5 to 6 inch | 55 | .. | .. |

**Cast Iron Pipe.**—The United States Cast Iron Pipe & Foundry Co. is low bidder on 1,700 tons of water pipe which will be laid at Long Beach, Cal. The same interest has taken 500 tons of water pipe from the city of Chicago. Award will be made this week on 2,500 tons of water pipe at Muskegon, Mich. Routine business is fair and makers are catching up on their deliveries on the smaller sizes.

We quote, f. o. b. Chicago, as follows:

Four-inch water pipe, $26.50; 6 to 12 inches, $24.50, larger sizes, $24; gas pipe, $1 a ton higher.

**Old Material.**—In spite of a fair amount of buying, the Chicago market is still exhibiting the downward tendency which has characterized it for the past two months. This is due both to the indifferent attitude of buyers and to large amounts of scrap available for remelting. Re-rolling rails have been sold down to $12 per gross ton, Chicago, and dealers' forge has recently changed hands at $9 per net ton. Cast iron is weak and 25 cents have been cut from the prevailing quotations on cast and mixed borings. Railroads are offering only moderate tonnages from time to time, and some lines are showing a disposition to store their holdings in anticipation of a better market. The success of this policy is open to serious doubt. The Chicago & Eastern Illinois railroad offered a list of 430 tons of old material, on which bids closed Oct. 25.

We quote, for delivery in consumers' yards, Chicago, as follows:

GROSS TONS.

| | |
|---|---|
| Old car wheels | $12.00 to 12.50 |
| Old iron rails | 14.50 to 15.00 |
| Rerolling rails (5 ft. and over) | 12.25 to 12.75 |
| Old steel rails (3 ft. and under) | 11.25 to 11.75 |
| Frogs, switches and guards | 10.00 to 10.50 |
| Heavy melting steel | 10.00 to 10.50 |
| Shoveling steel | 9.50 to 10.00 |

NET TONS.

| | |
|---|---|
| No. 1 R. R. wrought | $10.00 to 10.50 |
| No. 2 R. R. wrought | 9.00 to 9.50 |
| Arch bars and transoms | 13.50 to 14.00 |
| Knuckles, couplers and springs | 10.00 to 10.50 |
| Shafting | 14.00 to 14.50 |
| Iron car axles | 17.25 to 17.75 |
| Steel car axles | 15.50 to 16.00 |
| Locomotive tires | 14.00 to 15.00 |
| Dealers' forge | 9.25 to 9.75 |
| Pipe and flues | 7.00 to 7.50 |
| No. 1 cast | 10.50 to 11.00 |
| No. 1 busheling | 8.00 to 8.50 |
| No. 2 busheling | 6.00 to 6.50 |
| No. 1 boiler cut | 7.00 to 7.50 |
| Boiler punchings | 12.50 to 13.00 |
| Cast and mixed borings | 5.00 to 5.25 |
| Machine shop turnings | 6.00 to 6.50 |
| Railroad malleable | 9.75 to 10.25 |
| Agricultural malleable | 9.25 to 9.75 |
| Angle bars, splices, etc., iron | 12.00 to 12.50 |
| Angle bars, steel | 9.00 to 9.50 |
| Stove plate and light cast scrap | 9.25 to 9.75 |

**Among Ore Dealers Much Discussion Exists Over Great Northern Ore.**

Office of THE IRON TRADE REVIEW, Penton Building, Oct. 24.

**Iron Ore.**—Naturally the topics of paramount importance, among iron ore men during the past week, have been the announcement that the United States Steel Corporation will surrender its lease of the Hill ore lands, and that the freight rates on the Vermillion range will be lowered from 90 cents a ton from Tower, $1 from Ely, and 80 cents from other points on the Mesabi, to a flat rate of 60 cents on both ranges. While, of course, there is some speculation as to what will become of the Hill ore lands, that necessarily cannot take definite shape for some time to come. On the other hand, the new freight rate will soon be effective. It seems highly probable that this reduction, amounting to from 40 to 80 cents on the ore which goes to make a ton of pig iron, will have a depressing effect on the pig iron market. Of course, the pig iron which is to be made for at least a year will be made from ore hauled at the old rates, but pig iron buyers will not be slow to claim at as early a date as possible, that they ought to have the benefit of the decreased cost of manufacturing pig iron.

A very interesting point is as to what effect the reduction from Mesabi will have on the differential between old range and new range ores. The differential between old range

Bessemer and Mesabi Bessemer was 85 cents in 1893, 40 cents in 1894, 75 cents in 1895, 50 cents in 1896, 1898 and 1903, 35 cents in 1897, 60 cents in 1899, $1 in 1900, 1901 and 1902, and 25 cents each year, beginning with 1904, up to the present time. The question now is whether the differential will remain as it is, or be made greater on account of the new freight rates. It is possible, of course, that freight rates on the old range will also be reduced, but the feeling is general that those rates are much more reasonable than those which have long prevailed on the Mesabi and Vermillion ranges.

The outlook is that the Pittsburgh Steamship Co. will not ship over 18,000,000 tons of ore this year, a reduction of about 4,000,000, compared with last year.

On base ores with the guarantee of 55 per cent on old range and Mesabi Bessemer, and 51½ per cent on old range and Mesabi non-Bessemer, we quote as follows: Old range Bessemer, $4.50; Mesabi Bessemer, $4.25; old range non-Bessemer, $3.70; Mesabi non-Bessemer, $3.50.

**Pig Iron.**—While sales are still limited as to number and tonnage, the most encouraging feature is that shipments are going forward rapidly and the shipments of some companies show a highly gratifying increase, compared with those of the past two or three months. This is taken as positive evidence that the melt is increasing. We quote, delivered in Cleveland, for the remainder of the year, as follows:

| | |
|---|---|
| No. 1 foundry | $14.25 |
| No. 2 foundry | 13.75 |
| No. 2 southern | 14.35 |
| Gray forge | 13.00 |
| Bessemer | 15.90 |
| Lake Superior charcoal | 17.50 |
| Jackson Co. 8 per cent silvery | 17.50 |

**Coke.**—Coke prices remain firm and unchanged and sales are confined to small lots.

Connellsville furnace coke, $1.50 to $1.55 for prompt delivery, and $1.60 for last quarter; Connellsville foundry coke, $1.85 to $1.95 for prompt, and $2 to $2.40 for last quarter.

**Finished Material.**—The most important tonnage sold during the week was 550 tons by the American Bridge Co., to the Akron, Canton & Youngstown railroad. Other sales seldom exceeded 100 to 200 tons, but a pleasing number of such orders have appeared, sometimes much to the surprise of salesmen. Makers of rerolled reinforcing bars report a very active business, but with prices unsatisfactory. Steel bars are reported as very firmly held at the minimum of 1.10c, Pittsburgh, although some mills appear willing to sell up to April 1 at that figure. Nuts and bolts appear to be in very active demand, but prices generally are still low.

**Old Material.**—Some signs of a revival of interest in the heavy melting steel market are noted, local consumers inquiring for some fair tonnages for forward delivery. Offers of $11.25 for heavy steel have been made by a consumer, but dealers are not anxious to close. Rolling mills are working somewhat more steadily. Turnings, however, are weak, the stock being large and takers few. We quote, gross tons, f. o. b. Cleveland, as follows:

| | |
|---|---|
| Old iron rails | $14.00 to 14.50 |
| Old steel rails (under 6 ft.) | 12.00 to 13.00 |
| Old steel rails (over 6 ft.) | 12.00 to 12.50 |
| Relaying rails | 20.00 to 21.00 |
| Old car wheels | 12.00 to 12.50 |
| Old steel boiler plate | 9.50 to 10.00 |
| Malleable iron (railroad) | 11.50 to 12.00 |
| Steel axles | 18.00 to 18.50 |
| Axle turnings | 8.50 to 9.00 |
| Malleable iron (agricultural) | 10.75 to 11.25 |
| Heavy steel | 11.25 to 11.50 |
| Country mixed steel | 9.00 to 9.50 |

We quote, net tons, as follows:

| | |
|---|---|
| No. 1 R. R. wrought | $11.00 to 11.50 |
| No. 1 busheling | 9.00 to 9.50 |
| No. 1 machine cast | 11.00 to 11.50 |
| No. 1 dealers' wrought | 10.00 to 10.50 |
| Machine shop turnings | 6.75 to 7.00 |
| Pipes and flues | 8.00 to 8.50 |
| Wrought drillings | 6.75 to 7.00 |
| Stove plate | 9.00 to 9.50 |
| Cast borings | 6.00 to 6.50 |
| Wrought iron piling plate | 15.00 to 15.50 |
| Wrought iron arch bars | 15.50 to 16.00 |

## CINCINNATI

### Shipments Hurried by Melters.—Fair Number of Small Sales.

Office of THE IRON TRADE REVIEW, 808 Provident Bank Bldg., Oct. 24.

**Pig Iron.**—The past week has developed a fair run of small sales, and selling agencies are somewhat encouraged. Almost every mail brings shipping instructions to hurry forward contract iron, indicating that the melt continues to be about normal. Southern furnaces are said to be practically on the same basis as they have been for some weeks past, yet there is a tendency evident to secure business through the first quarter of next year on a $10 Birmingham basis. This in no instance is an open quotation, yet it is an assured certainty that each furnace is perfectly willing to protect its old customers and give them the benefit of any scaling in prices. A fair tonnage of southern charcoal iron went into Pittsburgh territory during the week, and ferro manganese and 50 per cent silicon are on the upward trend. It is rumored that several of the pipe interests have secured quite a block of the lower grades, and will perhaps be further interested if conditions are favorable. There is an inquiry from a central Ohio melter for 1,000 tons of various grades of analysis iron, delivery running through the first half of the year. Another consumer in the same territory is asking quotations on 1,550 tons of malleable, shipment to begin Nov. 1, running through June. An Indiana melter wants 500 tons of various grades for first quarter's requirements. A local melter bought 600 tons of various grades for next year. A central Indiana melter secured 1,400 tons of northern and southern foundry grades, and another concern in the same section bought 800 tons of southern foundry grades. In addition to these sales, there has been a fair sprinkling of smaller sales, aggregating considerable tonnage. Northern prices indicate no change and appear fairly well established at $13 for this year and $13.50 for first quarter of next, Ironton. Freight rates from Birmingham $3.25 and from Ironton $1.20. We quote at Cincinnati as follows:

| | |
|---|---|
| Southern foundry No. 2 | 13.25 to 13.50 |
| Southern foundry No. 3 | 12.75 to 13.25 |
| Southern foundry No. 4 | 12.50 to 12.75 |
| Southern gray forge | 12.50 to 12.75 |
| Mottled | 12.25 to 12.50 |
| Southern No. 1 soft | 14.70 to 15.20 |
| Southern No. 2 soft | 14.20 to 14.70 |
| Standard southern car wheel | 25.50 |
| Northern No. 2 foundry | 14.20 |
| Northern No. 3 foundry | 13.70 |
| Northern No. 4 foundry | 13.20 |
| Jackson county 8 per cent silicon | 16.95 |

**Coke.**—The market for all kinds of coke is quiet and dull. Foundry grades, aside from spot shipments, are without feature and there is nothing pending of special importance to the trade. Furnace contracts are moving forward with great regularity and melters are said to be anxious for shipments as rapidly as possible. Prices, so far as can be ascertained, are holding well, and from the leading coke districts are represented by the following schedule:

| | Prompt shipment. | Contract second half. |
|---|---|---|
| Connellsville district: | | |
| Foundry coke | $2.00 to 2.25 | $2.00 to 2.40 |
| Furnace coke | 1.55 to 1.65 | 1.75 to 1.90 |
| Wise county district: | | |
| Foundry coke | 2.00 to 2.25 | 2.00 to 2.25 |
| Furnace coke | 1.75 to 2.00 | *Sliding [scale basis. |
| Pocahontas district: | | |
| Foundry coke | 2.00 to 2.10 | 2.00 to 2.10 |
| Furnace coke | 1.50 to 1.75 | 1.60 to 1.75 |
| New river | | |
| Foundry coke | 2.50 to 3.15 | 2.60 to 3.25 |
| Furnace coke | 2.10 to 2.15 | 2.10 to 2.20 |

*Sliding scale basis means $1.60 for coke based on $9, Birmingham, for pig iron, with an advance of 16⅔ per cent of the amount over $9 at which pig iron is quoted. This is the usual basis. Other forms of sliding contracts are also made.

**Finished Material.**—Specifications in some instances are said to show some improvement over the preceding week, and a fair run of orders in the way of small lots were booked. The general condition of the market, however, is such that an unsettled feeling permeates it throughout. While the open quotation on steel bars is 1.15c Pittsburgh, it is said that the bulk

of the business is being placed at 1.10c. Plates are quotable at 1.15c and shapes 1.20c Pittsburgh. The local market is dull, and little tonnage in a structural way is being figured on at this time.

**Old Material.**—A fair tonnage found its way to dealers' yards during the week, and is being held for better prices. Demand is said to be light and stocks are slow in moving. Prices do not appear to change to any extent, yet perhaps fluctuate more or less according to circumstances. We quote dealers' prices about as follows:

GROSS TONS.

| | |
|---|---|
| Old iron rails, gross | $14.00 to 14.50 |
| Old steel, rerolling, gross | 13.00 to 14.00 |
| Old iron axles, gross | 19.25 to 19.75 |
| Steel melting scrap, gross | 11.00 to 11.75 |
| Car wheels, gross | 11.50 to 12.50 |

NET TONS.

| | |
|---|---|
| Old No. 1 R. R. wrought | $12.25 to 12.75 |
| No. 1 machinery | 10.50 to 11.00 |
| No. 1 busheling | 9.25 to 9.75 |
| Stove plate | 7.75 to 8.25 |
| Machine shop turnings | 6.50 to 7.00 |
| Cast borings | 5.50 to 6.25 |
| Grate bars | 7.25 to 8.00 |
| Sheet iron, bundled | 8.00 to 9.00 |
| No. 1 cast scrap | 10.00 to 11.00 |
| Heavy turnings | 7.75 to 8.75 |

## PHILADELPHIA

### Sharp Competition and Low Prices in Shapes—Pig Iron Quiet.

Oct. 22.

With structural material receiving the greatest prominence because of the keenness of competition, the Philadelphia and adjacent districts continue to bring forth some of the lowest levels in the present price cutting movement. Both eastern and Pittsburgh district mills are competing sharply for orders and are dividing honors. With their freight advantages, however, eastern mills are netting about $2 a ton more from this business than the plants in Pittsburgh territory. Other lines have not been affected in the same degree as shapes. New finished business is still irregular, some gains and some losses in the district being reported. Foundry pig iron buyers are having more trouble to get shipments on contracts, but indifference among both makers and consumers characterizes the market. Scrap is dull.

**Pig Iron.**—Two striking features of the pig iron market in eastern Pennsylvania and surrounding territory are becoming more pronounced; one is the falling back of the furnaces in their shipments against contracts for foundry iron for early delivery and the increased concern of consumers on this account; the other is the indifference of makers to the declining stocks upon their banks or to any thoughts of increased production. Instead, some of the furnace companies are planning further curtailment. The condition that has existed for some time in this territory, that of consumption of foundry iron, especially, running ahead of production, continues. With the total output of merchant iron in the district, about 65 per cent of capacity, some of the furnaces are behind in their shipments and requests for quick deliveries are more urgent. Conditions in steel-making irons are considerably different, as eastern works have ample supplies of ingots and pig iron upon their yards which the iron foundries, apparently, have not. The buyers, noting the many idle stacks, see no reason for buying ahead or of offering advances for forward iron, despite the pressure they are feeling for prompt iron. The makers, with their lowest-cost stacks in blast, observe little prospect for higher prices in the near future, and they are not inclined to blow in their more expensive plants. Under these conditions of indifference, the market is dragging. One or two eastern Pennsylvania makers have proven the exception in the last several weeks and are now booking a fair amount of foundry orders for first quarter shipment at the same level of prices ruling this year. Buyers generally want iron for early shipment. One sale of 1,200 tons of 2X of this character is noted. Prices are firm under present conditions and fall within the range of $15 to $15.25, delivered, for 2X. For the under grades quotations range from $14.25 to $14.75, delivered. A Delaware river pipe maker this week took 3,000 tons of forge and No. 3 for early shipment at $14.75, delivered. This price is above the market for pipe iron from northern makers, which rules from $14.25 to $14.50, delivered. A Virginia pipe foundry took 1,000 tons additional from furnaces in that district. Eastern steel works continue to carry on some negotiations for first quarter basic, and about 10,000 tons is pending. A central Pennsylvania works at a distant freight point has been quoted below $14.75, delivered, for first quarter. The nearby market has been about $14.50, delivered. Low phosphorus iron sales of about 600 tons at $20, delivered, are reported. An eastern steel works which in the past sold merchant iron on occasions has been more active in this market and its recent sales of foundry and basic grades have totaled about 20,000 tons.

We quote for prompt and last quarter shipment as follows:

| | |
|---|---|
| No 1X foundry | $15.25 to 15.50 |
| No. 2X foundry | 15.00 to 15.25 |
| No. 2 plain | 14.50 to 14.75 |
| Standard gray forge | 14.25 to 14.50 |
| Basic | 14.50 |
| No. 2X Virginia | 15.05 to 15.30 |
| No. 2 southern | 14.00 to 14.50 |
| Standard low phosphorus | 20.00 to 20.50 |

**Finished Material.**—Under force of the keenest kind of competition, prices on some forms of finished steel in this territory are being kept down to very depressed levels. In no line is the contest for orders being as sharply waged, or as a consequence, are the quotations as low generally, as in structural shapes. The major portion of the business being done in this material is within the spread of 1.30c to 1.35c, delivered in this district, or 1.15c to 1.20c, Pittsburgh basis, and as previously reported, as low as 1.25c, delivered, or 1.10c, Pittsburgh, has been done. The business is being divided between Pittsburgh and eastern mills and the latter, because of their small freights to the Philadelphia market, are netting from 1.20c to 1.25c at the mill at these prices. Some contracts for shapes for several months ahead are reported to have been taken at 1.25c and 1.27c, delivered.

Plates, where they have been joined with shape business, have been done by Pittsburgh mills at very low prices, as reported, but the competition in this material does not appear as severe as in shapes. Eastern plate mills report considerable business being entered at 1.35c to 1.40c, delivered.

In the volume of new business, the market still shows a lack of uniformity. Eastern sheet makers report the best accumulation of orders of several months in that line, with prices firmer, and there has been an increased buying of steel billets at around $21.40, delivered, or $19, Pittsburgh, on open-hearth steel. A little gain and some losses are noted among eastern plate and shape makers.

The Baltimore & Ohio railroad has finally decided to proceed at once with the purchase of 4,500 freight cars. This road has had under consideration for some time the purchase of a large amount of equipment and early developments are now expected with the announcement of the arrival at a decision by the executive officers. The Virginia Bridge & Iron Works has taken 1,500 tons for the Heard building at Jacksonville, Fla. J. Henry Miller, Inc., Baltimore, is the low bidder on the general contract for the Royster building, Norfolk, Va., 1,000 tons. The Westlake Construction Co. has taken the general con-

tract for the Rice hotel, Houston, Tex., 2,000 tons. Final action is expected this week on about 800 tons for the Citizens Bank building, Tampa, Fla. Bids have been entered for an apartment building, Baltimore, 600 to 700 tons. No award of the steel for the municipal convention hall, this city, has been made by the general contractor, the Chas. McCaul Co., and a considerable tonnage of other structural work remains pending in this and southeastern territory. Eastern boat builders placed some additional tonnage in the week for work recently taken.

We quote, delivered in Philadelphia and vicinity, as follows:

Structural shapes, 1.25c to 1.35c; steel plates, 1.30c to 1.40c; steel bars, 1.30c to 1.35c; common bar iron, 1.22c to 1.27c; cut nails, $1.75 to $1.80; blue annealed sheets, No. 10 gage, 1.55c to 1.60c; 4 x 4-inch open-hearth rolling billets, $21.40 to $22.40; forging billets, $26.40 to $27.40. Extras shown under Pittsburg report.

**Old Material.**—The tone in scrap is unchanged and the market is drifting with advantages lying largely with the buyer. Producers of old material in this territory are said to be carrying heavy stocks and they are reluctant to add to these lots where storage capacities will admit, which is not possible in some cases. The scrap yards also apparently see no early promise of change and are releasing material freely so that the offerings in the market at present are plentiful and bargain prices continue. The eastern steel mills and larger buyers are absorbing the offerings with moderation so that the supply exceeds the demand and prices in some grades are lower. Further sales of yard steel have been made at $11.75, delivered, but the best railroad material continues $12 to $12.25, delivered. Old iron rails have sold at $15.50, delivered, and steel rails are off 50 to 75 cents. An inquiry for 1,000 tons of low phosphorus scrap has been pending.

We quote, gross tons, delivered in eastern Pennsylvania and in New Jersey consuming territory, as follows:

| | |
|---|---|
| Old iron rails | $15.50 to 16.60 |
| Old steel rails (rerolling) | 12.75 to 13.50 |
| No. 1 heavy melting steel | 11.75 to 12.25 |
| Old car wheels | 11.75 to 12.00 |
| Old iron car axles | 22.00 to 22.50 |
| Old steel car axles | 17.50 to 18.00 |
| No. 1 R. R. wrought | 13.75 to 14.25 |
| Wrought pipe | 11.50 to 12.00 |
| Cast borings | 7.50 to 8.00 |
| Wrought turnings | 8.25 to 8.75 |
| Heavy cast scrap | 12.50 to 12.75 |
| Railroad malleable | 11.25 to 11.75 |
| Stove plate | 9.25 to 9.75 |

Freight rates per ton on scrap from Philadelphia to principal eastern consuming points are: $0.60 to Ivy Rock, Pa.; $0.65 to Phoenixville, Pa.; $0.80 to Coatesville, Pa.; $0.85 to Bethlehem, Pa., Reading, Pa., and Roebling, N. J.; $1.10 to Pottsville, Pa., Lebanon, Pa., and Columbia, Pa., and $1.20 to Harrisburg and Steelton, Pa.

# NEW YORK

## Basic Sold Into Next Year at New Low Level.

Office of THE IRON TRADE REVIEW,
1115 West Street Bldg., Oct. 24.

**Iron Ore.**—Some inquiry for small lots of Bessemer ore for eastern steel works continue current, but there is little action in the market. The furnaces, because of low pig iron prices, are endeavoring to obtain lower ore prices. The Wabana, Newfoundland, ore movement has been resumed after a short delay, caused by accidents to the ore carriers, Themis and Tellis.

**Pig Iron.**—The supply of foundry iron available for prompt shipment with eastern Pennsylvania makers, appears to be less than the current demand upon these furnaces and deliveries have been deferred in several cases. The urgency with which consumers are following shipments, indicates their barren stocks and their dependence upon a steady ingress of iron from the furnaces. The shortage in foundry iron is not accute enough to effect prices, especially with so many idle furnaces in eastern Pennsylvania and New Jersey, nor to impel makers to increase production, as they are indifferent towards raising their output at ruling values. New business is moderate and includes scattering sales in New England, New Jersey and lower New York State territory, in which very few 1,000-ton lots are numbered. The business is being divided chiefly between eastern Pennsylvania and Buffalo makers. The latter are selling forward iron down to $13, furnace, for No. 2X, or $14.75 to $15, delivered in this territory, and $15.45, delivered in New England. The leading brands of eastern Pennsylvania iron are held at from $15 to $15.25, tidewater, for No. 2X, or $14.25 to $14.50, furnace. In steel-making irons, a central Pennsylvania buyer has closed for about 5,000 tons of basic for first quarter shipment and is understood to have shaded $14.50, delivered, in this purchase. This grade has been held at a minimum of $14.50, delivered, by eastern Pennsylvania makers for early shipment, and it is thought in the market that the iron in this case may come from an outside territory. A New Jersey buyer recently bought 5,000 tons of standard low phosphorus iron for shipment through 1912 and the American Steel & Wire Co. was a recent purchaser of 1,000 tons of this grade for Worcester, Mass., delivery. This grade is held at about $20, delivered, in this territory. One Massachusetts buyer is asking prices on 5,000 tons of No. 2X for first quarter, and another from the same state for 2,000 tons of No. 2X for shipment Jan. 1. We quote for prompt and last quarter shipment at New York tidewater, as follows:

| | |
|---|---|
| Northern foundry No. 1 | $15.25 to 15.50 |
| No. 2X foundry | 15.00 to 15.25 |
| No. 2 plain | 14.50 to 14.75 |
| No. 2 Virginia | 15.05 to 15.30 |
| No. 2 southern foundry | 14.25 to 14.50 |
| Malleable | 15.00 to 15.25 |
| Gray forge | 14.25 to 14.50 |

**Ferro-Alloys.** — Recent selling of ferro-manganese for first half shipment at $37.50, Baltimore, in the face of a firm alignment of English makers with asking prices $1 higher, is attributed to material purchased by merchants before the recent advance was posted abroad. For first quarter, $37 has been done. Prompt material has been sold as low as $36.50, seaboard. A new inquiry for 500 tons for forward shipment has appeared. Fifty per cent ferro-silicon is firmly held, but Bessemer ferro-silicon is weak. We quote, 80 per cent ferro-manganese for prompt and forward shipment, at $36.50 to $37.50, Baltimore, and 50 per cent ferro-silicon at from $57 to $59, Pittsburgh.

**Cast Iron Pipe.**—In addition to the inquiry for 16,000 tons of large size pipe now pending, there is a heavy tonnage in prospect for other sections of the Catskill aqueduct, now building in Greater New York. A large part of this prospective tonnage is for Manhattan Island. The 9,240 tons of 48-inch pipe and specials recently awarded to general contractors for a Brooklyn section of this work was still being shopped about among the foundries this week. The contractor is expecting to buy this pipe at about $20, delivered. This reflects the prevalence of low prices. We quote 6-inch pipe in carload lots at from $21 to $22, delivered, f. o. b., New York.

**Finished Material.**—The market for finished products continues to drift with no particular developments of importance except the continued depression of prices and the evidence of intense competition in some lines. Buyers continue to place orders carefully and there is no general increase in tonnage. With some of the leading interests, the October tonnage is falling behind that of September.

Competition for plain material in structural lines is very keen. Each transaction, however, varies as to prices, in accordance with the competition of the attendant circumstances. The open quotations on plain material are 1.20c to 1.25c, Pittsburgh, or 1.36c to 1.41c, New York, but sharp concessions have been given from these levels. Wire products are again off $1 a ton and the American Steel & Wire Co. is now quoting on the basis of 1.60c, Pittsburgh, for wire

nails and 1.40c for plain wire. These prices represent open recognition of concessions that have been made by wire makers in different districts and apply for shipment over the next 60 days. Wire specifications are reported to be very satisfactory. Plates seem better held than shapes, but this market is also subject to concessions. The open market on steel bars remains 1.15c, Pittsburgh, or 1.31c, New York, and a considerable volume of business is being done on this basis.

Structural awards are coming very slowly, but there is a large amount of work pending in this district. It is announced that an award of the gigantic loft building for the present site of Madison Square Garden will be finally determined within the next several weeks. The promoters of this enterprise are now seeking to scale the figures for this work recently quoted, but have not generally asked for revised bids. There has been some doubt in the market whether this contract would be acted upon in the near future. The Otis Elevator building, at Eleventh avenue and Twenty-sixth street, this city, upon which bids have been entered, is expected to go to the American Bridge Co. The Schiff apartment, at Eighty-eighth street and West End avenue, this city, 550 tons, will be erected by Ravitch Bros. and fabricated by the Passaic Steel Co. Levering & Gerrigues have 300 tons for an extension of the Sprague Electric Co., Bloomfield, N. J., the Jones & Laughlin Steel Co., 300 tons for the Volney Paper Co., Fulton, N. Y., and the Lackawanna Bridge Co. 300 tons for a bridge for the Buffalo, Rochester & Pittsburgh. The terminal warehouse, Syracuse, N. Y., which was figured to require 1,200 tons of steel, will be built of reinforced concrete. The Adams Express Co. is preparing a site on lower Broadway for a large building. No plans are out, but it is reported that the structure may be 20 stories in height and require about 6,000 tons. Plans are out for the Seneca office building, Buffalo, to be erected by the American Telephone & Telegraph Co., whch will require 2,000 tons. The Pennsylvania railroad will take bids Oct. 27, for a bridge over the Susquehanna river, near Williamsport, Pa., 1,000 tons. The Fulton county court house, Atlanta, Ga., 1,000 to 1,200 tons, is still pending. The Guarantee Trust Co. building, this city, for which Marc Eidlitz & Son have the general contract, will require about 800 tons. There is not likely to be any action until the first of the year on the large power house near Mauchchunk, Pa., 1,500 to 2,000 tons.

The Baltimore & Ohio railroad has put out formal inquiries with car builders for 2,500 freight cars including 1,500 gondolas and 1,000 box cars. It is understood that inquiries for about 2,000 cars additional will shortly be forthcoming as the directors of the road have authorized the purchase of 4,500 cars. The New York Central railroad has placed an order with the American Car & Foundry Co. for 2,000 steel underframe box cars and the Union Tank Line has awarded 500 tank cars to the Pressed Steel Car Co. We quote, delivered in New York and vicinity, as follows:

Plain structural shapes, 1.36c to 1.41c; tank plates, 1.36c to 1.41c; steel bars, 1.31c; common iron bars, 1.25c; plates and shapes from store, 1.70c to 1.80c. Extras shown under Pittsburgh report.

**Old Material.** — There is a fair amount of tonnage being moved in different grades, but prices usually suffer as the market manifests little strength in the absence of consistent demand. Offerings are good, but they are in excess of the absorbing power of the market and bargain prices frequently develop. Very little heavy steel is being placed on new orders as eastern buyers are well filled or are not inclined to anticipate their needs. Their offers range from $11.75 to $12, delivered. Some low prices of No. 1 cast have developed, one consumer in this district taking a moderate tonnage this week at $11 delivered. We quote gross tons prices New York dealers will pay with the exception of cast scrap which has a local demand, as follows:

| | |
|---|---|
| Old car wheels | $ 9.75 to 10.00 |
| Old iron axles | 18.00 to 18.50 |
| Old steel shafting | 14.50 to 15.00 |
| No. 1 heavy melting steel | 9.50 to 10.00 |
| No. 1 R. R. wrought | 11.50 to 12.00 |
| Iron track scrap | 11.00 to 11.50 |
| Wrought pipe | 9.00 to 9.25 |
| Cast borings | 5.75 to 6.25 |
| Heavy melting cast | 11.25 to 11.75 |
| Railroad malleable | 9.00 to 9.50 |
| Stove plate | 8.00 to 8.25 |
| Grate bars | 7.00 to 7.25 |

Freight rates on scrap per ton to Steelton, Pa., Columbia, Pa., Pottsville, Pa., and Harrisburg, Pa., are $1.50 from Jersey City and $2.00 from New York; to Coatesville, Pa., Ivy Rock, Pa., Phoenixville, Pa., and Reading, Pa., $1.50 from Jersey City and $1.80 from New York; to Bethlehem, Pa., $1.10 from Jersey City and $1.60 from New York, and to Roebling, N. J., $1.00 from Jersey City and $1.50 from New York.

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**Charge of Agency.**—The Oil Well Supply Co., Pittsburgh, will not, after Jan. 1, 1912, sell line pipe as the agent of the Youngstown Sheet & Tube Co. The company has not decided what arrangement will be made in the oil territory outside of California, where Fairbanks, Morse & Co. and Associated Supply Co. will continue as selling agents.

## ST. LOUIS

**Small Sales for Quick Shipment Make Up Pig Iron Trading.**

Oct. 24.

**Pig Iron.**—Although there is plenty of southern iron to be had in the St. Louis territory on a basis of $10 to $10.50, f. o. b. Birmingham, buying has dropped to almost a standstill. One inquiry is out for 300 tons of southern No. 2 foundry and 50 tons of northern, and another for 600 tons of southern foundry. A local foundry bought 500 tons of southern No. 2 yesterday, and another St. Louis concern has purchased 300 tons of 80 per cent ferro manganese through an eastern broker for first half delivery. Prices, delivered, to which the Birmingham freight of $3.75 has been added, follow:

| | |
|---|---|
| Southern No. 1 | $14.25 to 14.75 |
| Southern No. 2 | 13.75 to 14.25 |
| Southern No. 3 | 13.50 to 14.00 |
| Southern No. 4 | 13.25 to 13.75 |

**Coke.**—Sales of coke the latter part of last week were as follows: 200 tons of Connellsville 72-hour foundry for smelting purposes; 350 tons standard 72-hour Connellsville foundry; 600 tons of 72-hour Connellsville foundry made by the Pioneer Coal & Coke Co. for shipment in equal monthly installments over the first half of 1912. No inquiry of any considerable size is in the market today. Prices remain as follows:

We quote 72-hour Connellsville foundry grades, $1.90 to $2.40 for whole of 1911; 72-hour foundry, $1.90 to $2.15 on tracks and for immediate delivery; 48-hour Connellsville furnace, $1.40 to $1.50; best 72-hour Virginia foundry, $2 to $2.25; 48-hour Virginia furnace, $1.60 to $1.85. The freight to East St. Louis and St. Louis is $2.80, and $2.70 from the Virginia fields when shipment is destined beyond St. Louis.

**Finished Material.**-Several office buildings are on paper in St. Louis, any one of which will require a considerable tonnage of steel if it materializes, but nothing definite had been done as yet. The demand for standing and light rails, bars and track fastenings was only fair last week, and slight improvement is noted in this market.

**Old Material.**—Transactions in scrap are about at a stand-still, with prices unchanged as follows:

| | |
|---|---|
| Old car wheels | $12.50 to 13.00 |
| Old iron rails | 13.00 to 13.50 |
| Rerolling rails (4 ft. and over) | 12.00 to 12.25 |
| Old steel rails (2 ft. and under) | 10.50 to 11.00 |
| Light section relayers, 45 lbs. and under, subject to inspection | 19.00 to 21.00 |
| Relaying rails, subject to inspection | 23.00 to 23.50 |
| Frogs, switches and guards | 10.00 to 11.00 |
| Heavy melting steel | 10.50 to 11.00 |
| Shoveling steel | 10.00 to 10.50 |

| | |
|---|---|
| No. 1 R. R. wrought | $10.00 to 10.50 |
| No. 2 R. R. wrought | 9.00 to 9.50 |
| Arch bars and transoms | 13.00 to 13.50 |
| Knuckles, couplers and springs | 9.50 to 10.00 |
| Shafting | 13.00 to 13.50 |
| Iron car axles | 18.00 to 18.50 |
| Steel car axles | 16.00 to 16.50 |
| Locomotive tires | 14.00 to 14.50 |
| No. 1 country wrought | 8.50 to 9.00 |
| Pipes and flues | 7.25 to 7.75 |
| Tank iron and cut boilers | 6.75 to 7.25 |
| No. 1 busheling | 8.50 to 9.00 |
| No. 2 busheling | 5.75 to 6.25 |
| Cast and mixed borings | 5.25 to 5.75 |
| Machine shop turnings | 6.50 to 7.00 |
| Railroad malleable | 9.00 to 9.50 |
| Agricultural malleable | 8.00 to 8.50 |
| Stove plate | 8.50 to 9.00 |
| Angle splice bars, iron | 10.50 to 11.00 |
| Angle splice bars, steel | 10.00 to 10.50 |

### Not Great Deal of Foreign Pig Iron is Coming In.

Oct. 20.

**Pig Iron.**—Sales on the north coast are confined to small lots but are being made with more frequency than in some months. The foundries of the northwest have been running at not more than 40 per cent of capacity for three months and have made very little increase during the past two weks, but there is a slight improvement shown in the buying, which is a good forecast of expected work. The lumber trade—the northwest trade barometer—is the cause of the brighter tone. Little pig iron is being brought in from foreign ports, but the jobbers have considerable in stock and are getting rid of it at a fair rate. Some of the vessels are bringing iron as ballast and they are very acceptable at the present time. Southern iron is being brought in fair quantities by rail or rail and water and is finding a fair sale at from $21 to $22 for the No. 2 grades. We quote foreign iron in gross tons, ex-ship Puget Sound or Columbia river delivery, f. o. b. Pacific coast terminals, as follows:

| | Prompt. | First quarter, 1912. |
|---|---|---|
| No. 1 Glengarnock | $24.50 to 25.00 | 25.00 |
| No. 1 Eglinton | 23.50 to 24.00 | 24.00 |
| No. 1 English Jarrow | 22.50 to 23.00 | 23.00 |
| No. 1 Chinese Han Yang | 22.00 to 22.50 | 22.00 |
| No. 1 Cleveland | 23.00 to 23.50 | 23.50 |
| English Doncaster | 22.50 to 23.00 | 23.00 |

**Coke.**—Coke turned out in Pierce and King counties, Washington, is moving swiftly at present and the prospects for a good winter of trading are bright. Seattle foundries are using considerable foreign coke known as the "German syndicate coke," but the other cities are using the local production more strongly. The German variety sells at from $10.50 to $12, but the local coke sells at around $8 per ton.

**Finished Material.**—The demand for structural steel is a little quiet, but jobbers have been very active considering the general depression in the northwest. A general improvement in common bars for concrete work has been noted for some time. A few structural jobs in Portland and Seattle are to be let soon.

**Old Material.**—The scrap business in the northwest has been practically dead since early in the spring and there are few bright spots in the market at present. With the opening of the lumber trade, however, this may be changed. The railroads are cleaning up to some extent and the dealers are yarding all that is brought in to them at the lowest possible prices. Relaying rails are moving better than a few months ago as the logging camps are extending operations. The Chicago Junk Co., of this city, last week finished up their contract to tear up and remove the west end of the Madison street cable line which was the biggest job in the junk line left in the past few months. We quote as follows:

| | |
|---|---|
| Old car wheels | $11.00 to 12.00 |
| Relaying rails | 24.50 to 25.00 |
| Stove plate | 7.50 to 8.00 |
| Grate bars | 3.00 to 4.00 |
| Miscellaneous scrap | 5.00 to 7.50 |

### Pig Iron Producers Sell Into Next Year at Today's Prices.

Birmingham, Ala., Oct. 23.

**Pig Iron.**—While the pig iron market has failed to develop any strength during the past week, yet producers have been much interested in the course of recent events; particularly is this true as to the report of the concellation by the Steel Corporation of its lease on the Great Northern ore properties, and it is thought that this will ultimately have a marked effect on the pig iron market in this district. Birmingham producers have also been much interested in the efforts of eastern furnaces and middle western furnaces to take all the business that such furnaces can possibly reach. This has led to the establishment of a $10 Birmingham schedule through the first quarter of 1912. In some cases it has been understood that contracts have been booked running from this date through the entire first half on the same basis. It is admitted that these prices are not very attractive from the producers' standpoint, but it seems to be the intention of several of the principal interests to at least put on some good back-logs, so to speak, at the $10 schedule. There is but little evidence of any shading on iron for prompt delivery; and, in fact, with shipments moving at the rate they are at present, there would seem to be but little necessity for tempting the buyer to take out iron that is not really needed, by shading the price. Quotations for delivery during the next six months are approximately as follows per gross ton at furnace yards this district:

| | |
|---|---|
| No. 1 foundry | $10.50 |
| No. 1 soft | 10.50 to 10.75 |
| No. 2 foundry | 10.00 |
| No. 2 soft | 10.00 to 10.25 |
| No. 3 foundry | 9.50 to 9.75 |
| No. 4 foundry | 9.25 to 9.50 |
| Gray forge and mottled | 9.00 to 9.25 |

**Cast Iron Pipe.**—The three producers of water mains in the Alabama district all report active operations at the plants, with shipments keeping pace with the production. No large contracts are reported under consideration at this moment; special attention is given, however, to rushing out shipments on orders already booked, and it is reported that prices are firm. Business is being taken for prompt shipment, or for delivery over the next six months, on the following basis, f. o. b. cars Birmingham, this price being per net ton: 4 to 6-inch $22.50 to $23; 8 to 12-inch $21.50 to $22; over 12 inch, average $21. This schedule covers water mains only, and gas pipe takes its usual differential of $1 per ton higher.

**Old Material.**—The market remains practically lifeless in this district. There seem to be no heavy accumulations on dealers' yards, but the dealer finds it difficult to interest sellers, as the present prices do not seem attractive. It is very difficult to establish a schedule of prices, but the following doubtless is a fair representation of the old material market here, this schedule being based on gross tons, f. o. b. dealers' yards, Birmingham:

| | |
|---|---|
| Old iron axles (light | $12.50 to 12.75 |
| Old steel axles | 11.00 to 11.50 |
| Old iron rails | 11.50 to 12.00 |
| No. 1 railroad wrought | 10.50 to 10.75 |
| No. 2 railroad wrought | 8.75 to 9.00 |
| No. 1 country wrought | 6.75 to 7.00 |
| No. 2 country wrought | 6.00 to 6.25 |
| No. 1 machinery, cast | 8.50 to 8.75 |
| No. 1 steel, scrap | 8.25 to 8.50 |
| Tram car wheels | 7.50 to 8.00 |
| Standard car wheels | 9.25 to 9.75 |
| Light cast and stove plates | 6.00 to 6.25 |

The Dunn Mfg. Co., Oxnard, Cal., is contemplating the installation of either an open-hearth furnace or a converter for melting steel for the production of steel castings. An oil melting furnace might be purchased, adapted for melting iron, steel and the softer metals.

## BRITISH IRON MARKET

### Better Prospects for Pig Iron and Finished Steel.

Office of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., Oct. 14.

**Pig Iron.**—The quarterly meetings this week have revealed a stronger condition of the pig iron market than was generally assumed to exist. Even Middlesbrough, which has been the weakest district, has realized an advance within the last few days. There was a decrease every day last week, bringing down Connal's stocks to 587,300 tons. This is directly due to the fact that warrant iron is materially below that quoted by makers. The warrant figure is 46s 4½d ($11.35), while makers ask 46s 9d per ton ($11.40). This improvement has taken place, in spite of somewhat smaller shipments, so far, this month. This reduction is largely due to continental transit difficulties. Buyers are still restricting themselves to small quantities, and no consumers have any reserve worth mentioning. There are at present only 21 furnaces in blast, and several more could be started, if required. There are, in warrant stores, 53,000 tons of metal, but a considerably larger amount in makers' hands. Rubio ore in the north east district is quoted at 19s 6d, but the figure is nominal, scarcely any business being done on this basis.

**Finished Iron and Steel.**—It is some years since Birmingham had so excellent a quarterly meeting as on Thursday last. The whole week was one of active negotiation, resulting in substantial additions to order books. The bar makers are unusually well situated, with substantial forward bookings. An informal discussion took place as to the advisability of putting up marked bars, but no change was made. There is still a margin of 30s between best and common iron, and as best pig iron has not materially changed, having in fact maintained its price, even when common qualities were falling, there is no excuse for advance. Birmingham trades, such as tube-making and bedstead making, take large quantities of iron, and the country districts are also making excellent demands. Certain manufacturers are preparing to put further mills, which have been idle for some time, into operation. In view of the great activity, is is remarkable that prices remain as steady as they are, but makers of unmarked bar can now obtain £6 10s. The sheet business continues well employed, but prices cannot be advanced in spite of the dearness of spelter. The recent additions to plant in South Wales have greatly increased the capacity for sheets, and prevented any rashness in raising prices. British makers are also meeting American competitors, particularly in South America and the West Indies. The wire trade is busier, although the keenness of foreign competition prevents high prices. All the Midland mills are assured of full work until the end of the year. In the steel trade, the conditions show quite exceptional strength. Owing to continental activity, Belgian makers can offer nothing until February, a date quite useless as a basis for present business. The reason given is the large demand for rails, both in Belgium and Germany.

## METAL MARKETS

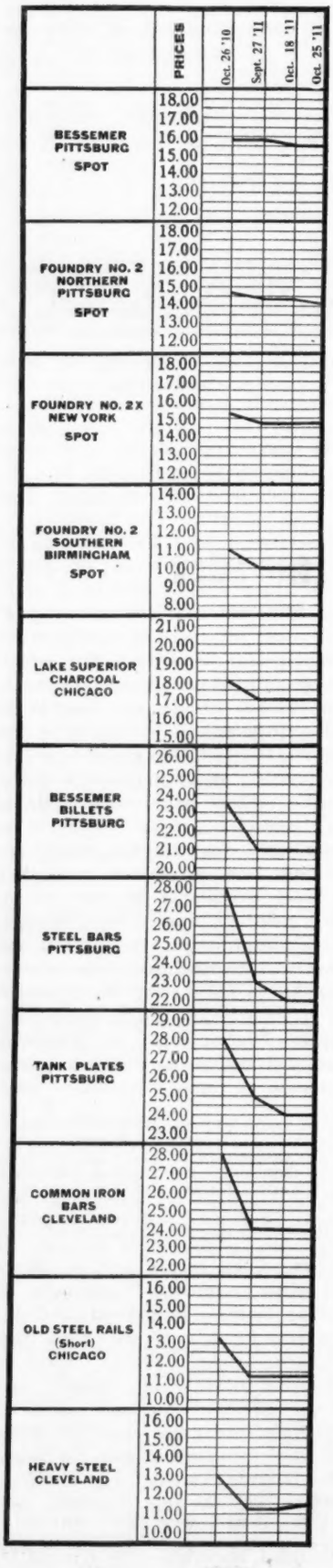
### New York

Oct. 24.

**Copper.**—The large business done last week has inspired a better feeling in the trade. Conservative estimates place the total of sales since Oct. 1 around 100,000,000 pounds, and the more optimistic are inclined to believe that the total exceeds that figure by from 10,000,000 to 20,000,000 pounds. Some important selling interests have booked all of the October and November output, and a part of December, at prices ranging up to 12.60c, delivered 30 days for electrolytic. One large producing company that markets its product has raised electrolytic to 12.62½c. The leading selling interest, however, is offering the metal at 12.37½c, cash New York, and 12.50c, delivered 30 days, and that basis can be shaded a few points among other holders. Lake copper is offered at a shade under electrolytic. The exports since Oct. 1 are 16,686 tons, and if the improvement that has taken place in that branch of the trade holds through the balance of the month a normal total will be reached by the time the final figures are compiled.

**Tin.**—Steady improvement in prices since Oct. 18 has advanced the market to £191 5s in London, and 42c in the local market. Domestic consumers closed for about an average amount of the metal during the week under review, and there is a fair volume of inquiry current. Estimates of deliveries into consumption during October exceed the probable amount of arrivals for the same period by about 500 tons. The latter will not

## PRICE CHART



likely aggregate more than 2,700 tons. Since Oct. 1 a total of 2,491 tons has arrived at Atlantic ports, and there are 1,058 tons afloat. The London market closed firm at £191 5s for both spot and three months.

**Lead.**—The large demand appears to have been filled without causing a material change in prices. The leading interest holds the market at 4.25c in New York for shipments, and other sellers range from 4.25c to 4.30c.

**Spelter.**—Scarcity in prompt shipments is unbroken and consumers are willing to pay from 6.25c to 6.30c in New York to meet urgent needs.

**Antimony.**—The market is dull and unchanged in prices. Cookson's is 8c; Hallett's is 7.60c, and Hungarian is 6.95c.

## St. Louis

Oct. 23.

**Lead and Zinc.**—A price of $45.68 a ton—the highest of the year—was obtained for zinc sulphide in the Missouri-Kansas-Oklahoma district last week, when ore from the north Webb City field sold for that figure on a base of 60 per cent metallic zinc, with a premium of $1 a ton for low percentage of lead bringing $30.15. The ore that assayed 63.50 per cent metallic zinc commanded $3.50 above the assay base. Bids in the open market ranged from $30 to $45 assay basis, with choice lots bringing $48 a ton. The Edgar Zinc Co. purchased part of the surplus ore of the H. L. Kramer mine at Cave Springs. The purchase price was not made public. Calamine remained strong at $24 to $25, assay base of 40 metallic zinc. Choice lots brought $32 a ton. Lead ore was fairly strong at $54 to $56 a ton.

## Chicago

**New Metals.**—The western demand for copper is fair and prices show no variation. The principal feature of interest in the metal market during the past week was the spectacular rise in the price of spelter, which is now up to its average quotations during the boom year of 1907. Local interests are curtailing their purchases of this metal to minimum, but some are in a position where they have to buy regardless of market conditions. Spelter is now quoted 6.25c, Chicago. Tin is a trifle higher and advanced 1½c during the week. Lead stiffened up to some extent and is now quoted 4.25c, Chicago.

We quote, dealers' selling prices, f. o. b. Chicago as follows:

Lake copper, carload lots, 12¾c; casting, 12½c; smaller lots, ¼c to ⅜c higher. Spelter, car lots, 6.25c; lead, desilverized, 4.25c in 50-ton lots; corroding, 25c per 100 pounds higher; sheet zinc, $8 list, f. o. b. La Salle, in car lots of 600-pound casks; pig tin, 42½c. Cookson's antimony, 9¼c; other grades, 8¼c to 8¾c.

**Old Metals.**—Higher prices for spelter have resulted in an advance in prime slab zinc dross, which is now quoted $88 to $90, Chicago. Zinc scrap has also advanced in sympathy with the rise in spelter. No other price changes of consequence are noted and the market generally is quiet. There is some evidence that the brass foundry melt is increasing slightly but the movement is so small that its effect on the market is negligible.

We quote the market, for Chicago delivery, as follows:

Copper wire, crucible shapes, 11c; copper bottoms, 9½c; heavy cut crucible copper, 11½c; heavy red brass, 10c; heavy yellow brass, 8½c; No. 1 red brass borings, 9½c. No. 1 yellow brass borings, 7½c; brass clippings, 8c; lead, pipe, 4c; zinc scrap, 4.60c; scrap aluminum, 12c; tea lead, 3¾c; No. 1 pewter, 28c; block tin pipe, 37c; tin foil, 33c; linotype dross, 3¼c; electrotype dross, 3c; stereotype plates, 4½c; stereotype dross, 3¼c; prime slab zinc dross, $88 to $90 a ton.

## Welding Concern Formed at Cleveland

The Cleveland Welding & Mfg. Co., Cleveland, has just been incorporated under the laws of Ohio, with a capital of $150,000. The incorporators are E. I. Heinsohn, H. J. Holden, L. E. Yaggi, M. L. Williams and C. D. Sword, all of Cleveland. Mr. Heinsohn recently resigned from the Standard Welding Co., Cleveland, with which concern he was connected in the manufacturing end. The new company expects to be prepared to announce its plans in about one month.

**Report Denied.**—The United States Steel Corporation has officially denied the report that the Pittsburgh Coal Co., the Monongahela River Consolidated Coal & Coke Co., H. C. Frick Coke Co., and the Ellsworth Colliers Co. contemplate merging their interests to gain control of the coal and coke fields in Washington county, Pa. The report stated that the merger would be under the control of the United States Steel Corporation.

## REROLLED MATERIAL

**Discussed at Meeting of Code Committee of Cleveland Council.**

A proposed amendment to the building code of the city of Cleveland has caused a lively controversy as to the use of rerolled rails in the manufacture of reinforcement bars. The amendment provides for the adoption of the standard specifications of the American Society for Testing Materials as to manufacture and chemical and physical properties. These specifications provide that "bars shall be rolled from billets" and conform to certain chemical and physical properties. At the hearing held by the council committee, Monday, Edward E. Hughes, vice president and general manager of the Franklin Steel Co. of Franklin, Pa., and L. W. Barnett, secretary of the company, were present, as were also representatives of the Carnegie Steel Co., Jones & Laughlin Steel Co. and the Lackawanna Steel Co. The representatives of the companies competing with the Franklin company came by special invitation. The Franklin Steel Co. claims that, as originally written, the specifications provided that "bars shall be rolled from new billets" and that the word new was eliminated so as to permit a rail to be considered a billet. The company states that while it is impossible to make some tests, which can be made in the case of bars rolled from new billets, the test of years of usage is the very best. This claim is denied by other companies, whose representatives claim that usage leads to imperfections and makes the employment of rerolled material dangerous.

The hearing will be continued in two weeks. Bars made from rerolled material have been used in many buildings recently constructed in Cleveland.

## Elected President of Carbon Steel Co.

Charles McKnight, of the National Bank of Western Pennsylvania, formerly identified with the Midland Steel Co., has been elected president of the Carbon Steel Co., Pittsburgh, to succeed Frank B. Robinson, and T. S. Atwater has been elected vice president of the company to succeed E. G. Buchannon. The company's plant is located at Thirty-second street, Pittsburgh, and has an annual capacity of 125,000 tons of ingots and 85,000 tons of finished products.

## MAKES CHANGE

**H. G. Stoddard Resigns From Trenton Iron to Go to Worcester, Mass.**

Harry G. Stoddard, the president of the Trenton Iron Co., Trenton, N. J., a subsidiary of the American Steel & Wire Co., has resigned and has acquired a substantial interest in the Wyman & Gordon Mfg. Co., of Worcester, Mass., and Cleveland, manufacturer of drop forgings and automobile parts. He will reside in Worcester, Mass., and will have charge of the commercial end of the business.

Mr. Stoddard has been long affiliated with the steel business, his experience covering a period of 19 years, and he has been prominent and well known in the wire branch of the industry. His first connection was with the Washburn & Moen Mfg. Co., of Worcester, Mass., one of the pioneers in the wire manufacturing business of this country. He became assistant to Phillip Moen, president of the company, and later was made manager of the Worcester works when the company was absorbed by the American Steel & Wire Co. From there he went to Trenton as president of the Trenton Iron Co., and he has served in that capacity for the past seven years. Mr. Stoddard was actively affiliated with many of Trenton's charitable institutions and enterprises, and was one of the most prominent citizens of that city.

## Death of Robert Mather

Robert Mather, chairman of the board of directors of the Westinghouse Electric & Mfg. Co., and a director of several railroads and banks, died Oct. 24, at his home, 113 East Thirty-seventh street, New York, death being due to acute peritonitis. He was ill only a few days.

Mr. Mather was born in Salt Lake City, Utah, July 1, 1859. He began his career in the office of the treasurer of the Chicago, Burlington & Quincy railroad, Chicago, having that same year graduated from Knox college. In 1886 he was admitted to the bar in Chicago and three years later was appointed local attorney for the Chicago, Rock Island & Pacific railroad at Chicago. In 1902 he became general counsel for that system and in 1904, its president.

Mr. Mather was elected chairman of the board of the Westinghouse Electric & Mfg. Co., Jan. 19, 1909, succeeding E. C. Converse, who had held the position of temporary chairman. He was also a director of the Chicago, Rock Island & Pacific railroad, of the National Bank of the Republic, Chicago, the Mercantile Trust Co., of New York, the Equitable Life Assurance Society, the Havanna Electric Co., and Knox college, beside being vice president of the St. Louis & San Francisco railroad and general counsel for the Chicago & Alton railroad.

## Resume Ore Carrying

The large ocean ore carriers, the Themis and the Tellus, which have been conveying iron ore from the Wabana, Newfoundland, mines to this country, are again in service after having been disabled recently by similar accidents. Within a few days of each other, both vessels lost blades

ROBERT MATHER,

Chairman of the Westinghouse Electric & Mfg. Co., who died Oct. 24.

of their propellers, necessitating their going into repair docks. The Wabana ore movement to this country continues very steady.

A radiator foundry, 200 x 800 feet, with a self-supporting roof to eliminate all columns, will be built by the Continental Radiator & Foundry Co., St. Louis. The plant will have a capacity of 3,000,000 feet of radiation per annum. The site has not yet been obtained, although the plant will be located in the vicinity of St. Louis. The company is in the market for radiator molding machines, cupolas, tumbling mills and other foundry equipment.

## TALK VESSEL MERGER

**Independent Owners Discuss Preliminaries.**

A number of independent vessel owners have met in Cleveland this week to discuss the preliminaries of a vessel merger, and while nothing has so far come of it, it is quite likely that before the year is over a definite conclusion will have been reached.

The subject has been under advisement for over a year, but no real progress has been made except within the past few days, doubtless due to the natural reluctance of the individual members to step out from active participation in the trade. The situation, however, is acute and it is absolutely imperative that something along the line should be done to restore the trade to a normal state. The demoralization has been brought about through the over-supply of tonnage, due very largely to the activity of certain promoters in building ships for which there was no real need and for which there could be no steady market. It will take some time for the trade to absorb this surplus tonnage. Its ultimate absorption of course is a foregone conclusion, but meanwhile independent vessel property is in a bad way.

It is understood that five fleets have agreed to enter the merger which includes two fleets belonging to shippers, the total embracing about 60 modern freighters. Other fleets will doubtless be added before the plan is definitely worked out. The intention is to place the boats in one of the companies now operating, but the form of merger has not as yet been thought out in detail.

The economies of such a plan are quite clear. For instance, shore expenses could be reduced by the elimination of offices; agents could be dispensed with at the various ports by geographical distribution of the officers; the expenses of navigation could be reduced by fitting out vessels only as they are needed; and a large sum of money could be saved by operating without insurance, as is the present intention. The headquarters would, of course, be in Cleveland. It is a little early to speak more definitely of the matter, but it appears to be certain that the independent fleet, or a large part of it, will be operated as a unit in 1912.

The J. G. Brill Co., Philadelphia, has declared the regular quarterly dividend of 1¾ per cent on the preferred stock, payable Nov. 1.

## ERECT LABORATORIES

**At Carnegie Technical School for Civil Engineers.**

Pittsburgh, Oct. 24.—Announcement is made that another building will be erected at the Carnegie Technical Schools, Pittsburgh, for the exclusive use of the civil engineering department of the School of Applied Science. It will contain two large testing laboratories. The new structure will be of steel, concrete and brick construction, 60 x 175 feet and 80 feet high. Most of the basement and ground floor will be combined into a double story room 60 x 140 feet. A large double story room on the basement and first floor will be used for a hydraulic laboratory, while a portion of the second floor will be used for a testing laboratory. The improvements will cost approximately $100,000. Ground will be broken in about three weeks for the building of the school of applied science.

## Receivership Suit Over St. Louis Furnace

Suit to have a receiver appointed for the St. Louis Blast Furnace Co., St. Louis, has been filed in the United States circuit court at that city by M. S. Kammerer, Daniel Whitney, C. H. Jacobs and Daniel Connor, composing the Whitney-Kammerer Co., of Pennsylvania. The plaintiffs claim that the firm is insolvent and that they hold first mortgage bonds, issued by the furnace company; that the company's business has ceased and that it is unable to pay its debts. These statements are denied by A. D. DeCamp, of the firm of DeCamp Bros. & Yule Iron, Coal & Coke Co., who claims that arrangements are being made to operate the blast furnace plant in a short time.

## Takes Over Concern

The South Atlantic Blow Pipe & Sheet Metal Co., recently incorporated by T. H. McMillan, Savannah, Ga., with a capital of $50,000, has taken over the controlling interest in the Standard Blower & Metal Mfg. Co., Atlanta. The latter concern manufactures slow speed blow pipe systems for installation in lumber plants.

**Heard Lecture.**—Charles S. Gingrich, of the Cincinnati Milling Machine Co., Cincinnati, gave an illustrated lecture on "Modern Machine Shop Milling Processes" at a meeting of the Cleveland Engineering Society, Cleveland, on Oct. 24. Mr. Gingrich treated his subject under the following heads: General types of milling machines; general methods of milling, and general methods of milling for higher efficiency. He showed by stereopticon views work done by each of these methods, gave records and tests for accuracy in all cases, and discussed the latest developments and designs of cutters. After the lecture many questions were asked and discussed.

## Will Merge Wood and Heckscher Concerns

Stockholders of the Alan Wood Iron & Steel Co. and of Richard Heckscher & Sons Co., will hold special meetings on Nov. 6, in order that the Heckscher company may be formally dissolved and its properties taken over by the Alan Wood company. This is according to the terms of an agreement of merger which has been in force for over a year. Under this agreement, the Alan Wood company took over the Heckscher company and has been operating the two stacks of the latter at Swedeland, Pa., which is directly across the Schuylkill river from the Alan Wood Steel Mill.

## Officers Indicted

The Marion county, Ind., grand jury has indicted William H. Brown, president, John L. Ketcham, secretary and treasurer, William R. Brown, superintendent, Frank J. Vinson, former auditor, and Harry B. Holliday, former paymaster, of the Brown-Ketcham Iron Works, Indianapolis, now in the hands of a receiver. The charges are embezzlement and receiving embezzled goods. A report recently made by the receiver purported to show overdrafts in excess of $50,000 by officers of the company.

## Rate Hearing Postponed

Pittsburgh, Oct. 23.—The interstate commerce commission has postponed the proposed hearing on freight rates on coal and coke shipments from Pittsburgh to the lakes and western points and on ore rates from the lakes to Pittsburgh, until Nov. 13. The hearing was originally scheduled for this week.

The Universal Oil Co. of California will soon call for bids on machinery and pipe for a pipe line from Lost Hills, Cal., to the ocean.

## NEW PLANT

**Of Minnesota Steel Co. Nearly Completed.—Electric Furnace to be Used.**

Chicago, Oct. 23.—The Minnesota Steel Co. is making excellent progress on its new plant at Duluth. About 800 men are employed on the work at present, 150 of whom are erecting structural steel for the buildings. The structural work is being done by the American Bridge Co. Work has just commenced on 13 coke ovens. The merchant mill building will be 1,000 feet long and the walls and roof for this structure have already been erected. The foundations for the blooming mill are in and the blast furnace plant is well under way. The stacks for the open-hearth furnaces, seven in number, are about half completed. The shops and warehouses have been finished. In addition to blast furnaces and standard open-hearth steel furnaces, the plant will be equipped with an electric furnace.

## Rebuilds Works

The Harriman Mfg. Co., Harriman, Tenn., advises in regard to its recent fire that it is proceeding rapidly with the rebuilding of the burned portion of the plant. The specifications of the underwriters are being followed with a view to having the new building thoroughly standard in every detail. The company is not in the market for any engines, boilers or machinery, since the power equipment was not damaged and the machinery which was in the fire can be repaired.

## St. Louis Shipments

Receipts and shipments of pig lead and zinc at St. Louis for the last two weeks were as follows:

| | | Zinc and Spelter. | Pigs of lead. |
|---|---|---|---|
| Receipts: | | | |
| For week ending | Oct. 14... | 117,460 | 24,870 |
| For week ending | Oct. 21.... | 95,980 | 32,870 |
| Shipments: | | | |
| For week ending | Oct. 14... | 101,950 | 21,690 |
| For week ending | Oct. 21... | 113,360 | 25,150 |

The Dominion Iron & Steel Co., Sydney, N. S., has purchased from Bearinger & Chapin, Toronto, the Montgomery lumber limits at Dalhousie, N. B. Besides 80 square miles of timber limits, there is one mile located in Dalhousie, tugboats, booms, logs and an entire outfit. The new owner contemplates extensive improvements. The purchase price is said to have been $250,000.

## PLACING CONTRACTS

**For Concentrating Mill at Mineville, N. Y.**

Some contracts are being placed by Witherbee-Sherman & Co., Inc., in connection with the erection of its new No. 4 concentrating mill at Mineville, N. Y., but because of trade conditions in the iron ore and general iron markets, the work of construction is proceeding leisurely. Contracts were recently placed with the General Electric Co. for the electrical equipment required. The new mill will treat ores from the Barton Hill tract and especially will be made of material of Bessemer and low phosphorus quality. Both drum and belt separators are to be installed.

## Plan to Build Branch in Canada

Toronto, Oct. 23.—The establishment of the Canadian branch of the Vickers-Maxim Co., according to F. Orr Lewis, president, will entail an expenditure of $5,000,000. The plant will be at Montreal where 35 acres adjoining the riverside at Molson's creek, Maisonneuve, have recently been acquired for the shipyard and five acres for the shipyard basin. The dredging has already been commenced by the harbor commissioners. The basin will have a depth of 30 feet at low water and will be 500 x 1,000 feet, enclosed on three sides by concrete wharves. A floating dock, 700 feet long, will be placed in the basin. The plant when completed will employ 3,000 men.

## Personal

A. Eugene Balles has disposed of his interest in *Advertising and Selling* magazine and has resigned as vice president and general manager.

H. S. Wilkinson, president of the Halcomb Steel Co., Syracuse, N. Y., has been elected a director of the Crucible Steel Co. of America.

John B. Prall, of Webb & Prall, has been chosen a director of the Vulcan Detinning Co. to fill the unexpired term of Isaac Stibel, deceased.

W. A. Sibley, of the Sibley Machine Tool Co., South Bend, Ind., left for Europe, Oct. 14, to be gone five months on business.

J. W. Carrel, general sales manager of the Lodge & Shipley Machine Tool Co., Cincinnati, left for Europe, Oct. 14, on business for the company. He was accompanied by Mrs. Carrel.

William B. Pollock, president of the William B. Pollock Co., Youngstown, O., was injured by a railroad train at the Erie station, Youngstown, Oct. 20. His injuries are not regarded as serious.

Ward B. Perley, assistant to President Jas. A. Farrell, of the United States Steel Corporation, has returned after a month's vacation, a considerable part of which was spent in motoring in Canada.

Albert A. Wiggin, president of the Chase National Bank, New York, has been elected a director of the American Locomotive Co., succeeding the late Julius E. French. The other directors have been re-elected.

Herbert B. Cox, assistant to Leonard Peckitt, president of the Empire Steel & Iron Co., Catasauqua, Pa., has severed his connection with that company and has been succeeded by Lowell H. Brown. Mr. Cox is now on a tour of Europe.

Geo. W. Green, formerly Pittsburgh manager of the American bureau of inspection and tests, has severed his connection with that concern and is now associated with the Hildreth-Jones Co., of Chicago, and Hildreth & Co., of New York, in the capacity of mechanical engineer.

## Obituary

Henry A. Sell, superintendent of the Modern Steel Structural Co., Waukesha, Wis., committed suicide in Milwaukee, Oct. 19. He was mentally deranged, it is believed, and brooded over fancied grievances.

Chas. H. Vannier, chemist and metallurgist, died at Sierra Madre, Cal., Oct. 12. Mr. Vannier was born in Brooklyn, N. Y., and was a graduate of the Rutgers College and the Berlin School of Mines. For 15 years he was connected with the Griffin Wheel Co., Chicago, as consulting engineer and since 1904 he resided in Buffalo.

Watson M. Holmes, who was associated with his father, Hector A. Holmes, in the invention of the first self-binding reaper to meet with commercial success, died at his home in Hoosick Falls, N. Y., Oct. 16, aged 55 years. The Walter A. Wood Mowing Machine Co., Hoosick Falls, first began the manufacture of the Holmes machine in 1879. The elder Holmes had worked since 1862 on the perfection of his invention.

Francis Guerdan, aged 83, president of the Francis Guerdan & Son Iron Works, died at his home, at St. Louis, Oct. 22. Mr. Guerdan was a native of Germany, and came to St. Louis 75 years ago. He embarked in the grocery business when a young man, but abandoned it to enlist in the Union army at the beginning of the civil war. When the war closed he returned to St. Louis and engaged in the iron business under the firm name of Francis Guerdan & Son.

## To Make Cotton and Sugar Machinery

The Plantation Equipment Co., St. Louis, capitalized at $100,000, has applied for a charter under the laws of Missouri. The promoters are William C. and Arthur Zelle, who have been in business in St. Louis for many years as the Zelle Bros. Commission Co. The line of gasoline-propelled sugar and cotton machinery which the company makes is now being manufactured in Belleville, Ill., but it is expected that a plant will be erected in St. Louis.

## Will Have Offices

The executive offices of the United States Cast Iron Pipe & Foundry Co., 71 Broadway, New York, will be removed about May 1, 1912, to the company's plant at Burlington, N. J. The local sales office and rooms for the directors and executive committees will be continued at 71 Broadway.

## Works Were Sold

The plant of the Eureka Steel Co., at Lowe and McKnight streets, West End, Pittsburgh, has been sold at a receiver's sale to M. A. Ablersberg, of Homestead, Pa.

**Locomotives Placed.** — The South Manchurian railway has placed an order with the American Locomotive Co. for five 10-wheel locomotives. Other recent orders taken by this company include one four-wheel saddle tank locomotive for Guinle & Co. and one four-wheel locomotive for the San Paulo Tramway Light & Power Co., Ltd.

The contract has been awarded to George T. Ladd, Pittsburgh, for a 12 and 16-inch pipe installation with the necessary valves for a hydraulic mining operation for the Leuadolupe & Porce Mining Co., Columbia, S. A. The installation includes a Giant hydraulic elevator.

The Bauroth Machine Co., Toledo, O., has changed its name to the Bauroth Machine & Stamping Co.

# A Continuous Foundry for Small Castings

## A Circular Mold Conveyor With Concentric, Circular, Overhead Sand Conveyors Are Features of This Shop

Molding machines became a potent factor for economy in the foundry industry during the last decade. Although working a great change, the affects of which are still felt throughout the trade, the general adoption of machine molding is merely the predecessor of a greater revolution in foundry practice which is to come. This revolution involves discarding the old intermittent system of operation and adopting for manufacturing purposes the continuous foundry in its various forms. Already there are a considerable number of successful continuous foundries scattered throughout the country and some of the more notable ones have been described in these columns. Special mention may be made of the continuous straight-line cast iron pipe foundry of Jas. B. Clow & Co., at Coshocton, O., a description of which appeared in THE IRON TRADE REVIEW, Jan. 6, 1910, and of the Crane Co.'s continuous malleable foundry at Chicago. These shops, while they have not yet reached the final form which further experience will suggest, represent two distinct types that in a general way are pretty thoroughly crystallized. They may be termed the straight line or multiple unit and the circular or endless types, respectively.

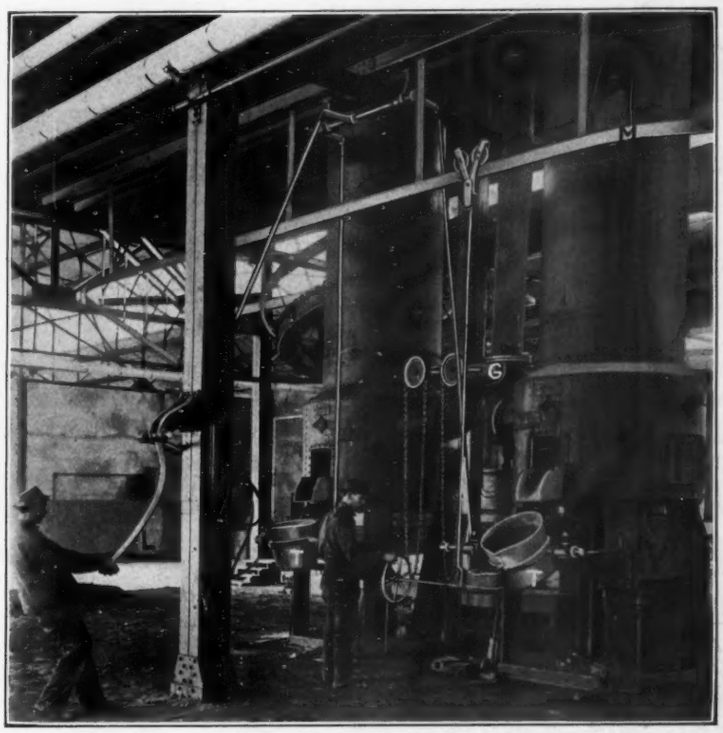


FIG. 1—TAPPING SIDE OF THE CUPOLAS, SHOWING THE RECEIVING LADLE FROM WHICH THE METAL IS POURED INTO THE LADLES

A new continuous foundry of the latter type, embracing a number of features not heretofore found in shops of this character, has recently been completed by French & Hecht, at Davenport, Ia.

French & Hecht, successors to the Bettendorf Steel Wheel Co., are builders of metal wheels for farm wagons and agricultural machinery. The new foundry has been constructed to manufacture cast iron hubs and boxes for the metal wheels which are produced in large quantities.

A general view of this continuous system embodying the molding floor is shown in Fig. 2, and a plan view is illustrated in Fig. 13. Referring to these illustrations, it will be noted that the plant consists essentially of a circular mold conveyor operating on a track, 85 feet in diameter, with concentric circular sand conveyors overhead. The sand conveyors are provided with suitable outlets and chutes leading to molding machines which are placed on both sides around half the circumference of the moving table. As the molds are finished, they are placed on the table which carries them to a point in front of the cupolas where they are poured. After being allowed to cool, they are swept off the table by a special device and dumped into a revolving drum which separates the sand from the castings. The castings slide down a chute to the cleaning room underneath, and the sand drops through a grating into the sand mixer.

The great distinction between this and other devices of the same general character is that the moving table is a solid, rigid unit and has no joints, couplings or independently moving parts. The table is constructed of segmental cast iron plates securely bolted together into one solid ring. This ring operates easily on a single track on the floor, being carried by a single file of supporting wheels, as shown in Fig. 2. This apparatus is used to make castings weighing up to 75 pounds and has a capacity of 40 tons per day. The building in which the foundry is housed is a two-story, reinforced concrete structure, absolutely fireproof. The structure is triangular in shape; the molding and core rooms are on the second floor, while the cleaning, storage and sand-mixing apparatus are on the ground floor. The sides are all glass, and a modified saw-tooth roof has been adopted, with the result that all portions of the shop receive an abundance of natural light. For artificial illumination, tungsten clusters are used throughout. They are hung about 25 feet from the floor and are spaced 30 feet apart in each direction. Each cluster contains four 120-watt Mazda units surmounted by a plain circular reflector. The building is 320 feet long on the perpendicular side, 202 feet on the base and 290 feet on the hypotenuse. The narrow portion of the second story, back of the cupolas, is used for floor molding and for rolling steel hubs from sections of seamless tubing. Three electric elevators provide transportation between the first and second floors, and one extends up to the charging floor.

A plan of the ground floor is shown

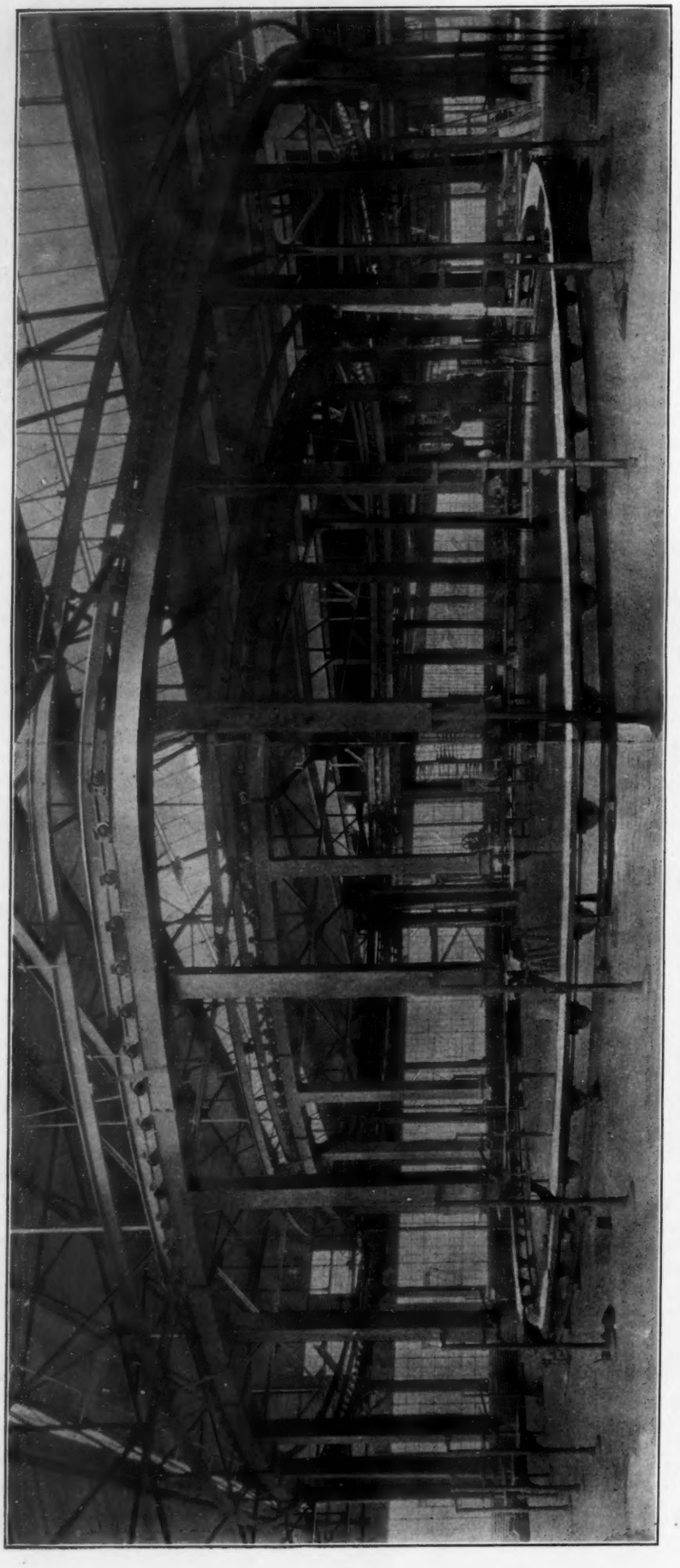


FIG. 2—GENERAL VIEW OF THE CONTINUOUS MOLD AND SAND CONVEYOR IN THE FRENCH & HECHT FOUNDRY, DAVENPORT, IA.

in Fig. 17. About 8,000 square feet at the narrow end are reserved for the storage of pig iron, coke, scrap and sand under cover. A 24-inch gage industrial track extends along the floor adjacent to the storage bins, as shown. This track is provided with a turntable at the west end which connects with another track at right angles terminating at the charging floor elevator. Near the turntable are two concrete coke and sand bins, each 50 feet long, 18 feet wide and 10 feet deep.

The buggies in which the charges of coke, iron and stone are carried to the cupola are shown in Figs. 10 and 16. They have trough-shaped bodies open at the front end and are mounted on four wheels. The weight of the buggies, of course, varies to some extent, but in order to facilitate handling the charges, each buggy is permanently loaded, if necessary, so that its weight empty is exactly 440 pounds. On the track directly in front of the elevator on the first floor, Fig. 17, is a platform scale on which each charge is weighed before being conveyed to the charging floor. This scale is provided with a dial, which has been specially calibrated so that the tare weight of the buggy, 440 pounds, is automatically subtracted, the scale figures showing the actual net weight of the material in the car. This reduces the possibility of error in making up charges to a minimum, saves considerable time and avoids arithmetic.

### The Charging Floor.

A general view of the charging floor, which is unusually large, is shown in Fig. 10. The industrial track extends across the floor from the elevator to turntables placed behind each cupola. Suspended from the roof truss, just back of each cupola, are air hoists, *H*, Fig. 10, which are used in charging. The hoists are provided with chains by means of which the rear end of the charging buggy is lifted from the track, using the front wheels as a pivot, and tilted until the charge drops out of the front end into the cupola. This device is simple and inexpensive in construction. The two cupolas were installed by the Whiting Foundry Equipment Co., Harvey, Ill. They are duplicates, each one being 32 inches in diameter inside of lining, and since the foundry operates continuously they are used alternately, one being in blast one day and its mate the next. The blast is furnished by a positive pressure blower installed on the charging floor in the rear of the cupolas. It was built

by the Connersville Blower Co., Connersville, Ind., and is rated at 10 cubic feet per revolution. It is belted to a 15-horsepower, 440-volt, 60-cycle, three-phase Westinghouse motor. A normal blast pressure of seven ounces is carried, which may be increased to 11½ ounces by weighting the safety valve on the blower.

Attention is directed to the gate valves in the blast pipes, shown at *G*, Fig. 1. These valves are operated by chains from the floor. They are heavy in construction and are the standard design of the Crane Co., in this particular being unlike the average blast valve, when such a convenience is installed at all. By means of these gate valves, which have screw stems, the quantity of air entering the cupolas may be controlled to a nicety.

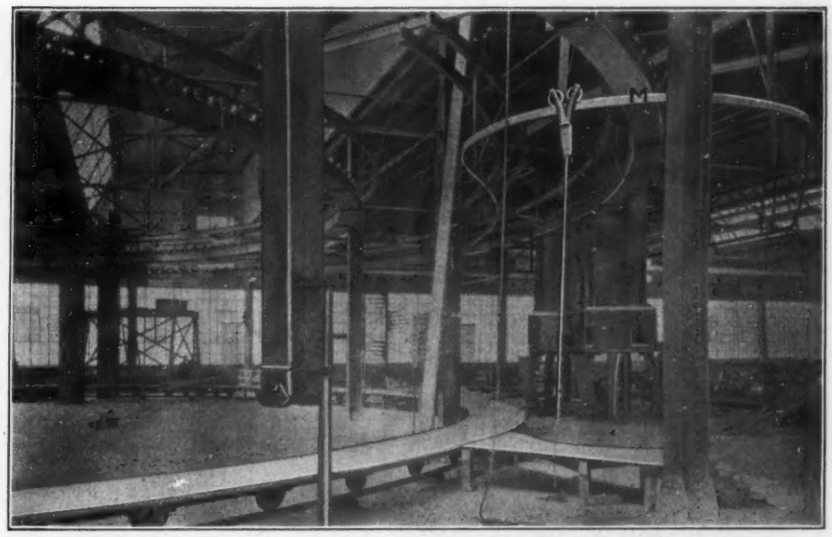


FIG. 4—THE CUPOLAS AND LADLE TROLLEY AS SEEN FROM THE CASTING PLATFORM

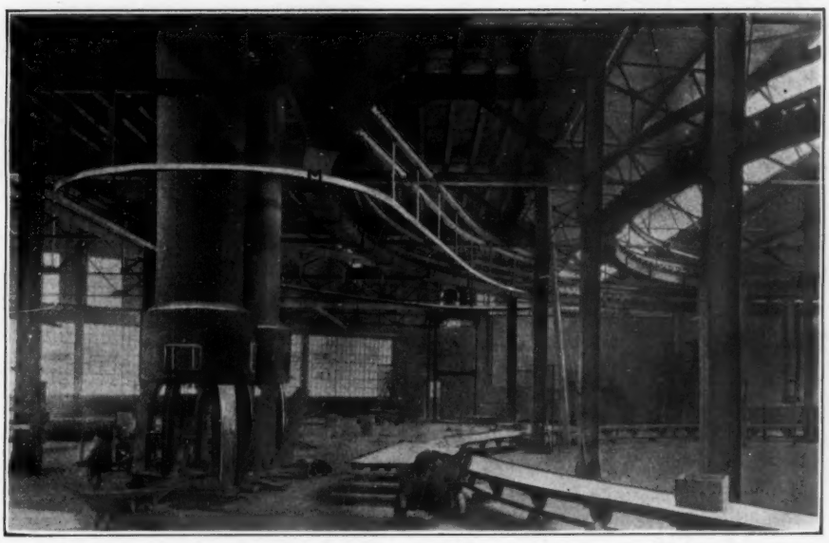


FIG. 3—THE CUPOLAS, SHOWING THE CASTING TABLE IN THE FOREGROUND

The work is arduous but not as severe as might be expected since the trolleys run very easily and carry the entire weight of the ladle and iron.

The ladle carriers, Fig. 9, are rather ingenious in construction. Instead of the usual forked end which is awkward and tiring to manipulate, the shaft of the carrier terminates in a straight handle which rests in the palm of the left hand. At about the middle of the shaft is a handwheel, *W*, Fig. 9, 18 inches in diameter. This is grasped with the right hand and is used to steady and tilt the ladle as required.

The slag notch in each cupola is opposite the tap hole, and the slag drops through a chute to the floor below, where it is disposed of.

The essential features of the con-

The arrangements for pouring the metal are shown in Figs. 1, 3 and 4. The cupola spouts are short and lead to small tilting ladles, *T*, Fig. 1. These ladles can be tilted by lifting the lever, *L*, shown attached to the post at the left of the illustration. An elliptical mono-rail, shown at *M* in these illustrations, extends around behind the cupolas over the tilting ladles and also covers a segment of the circular mold conveyor. A number of trolleys operate on the mono-rail and from each one is suspended a 120-pound pouring ladle in charge of one of the men in the pouring gang. These men, four in number, are constantly engaged in pouring molds. They fill up their ladles behind the cupola, push them out over the table where the molds are poured, empty them and return for more iron.

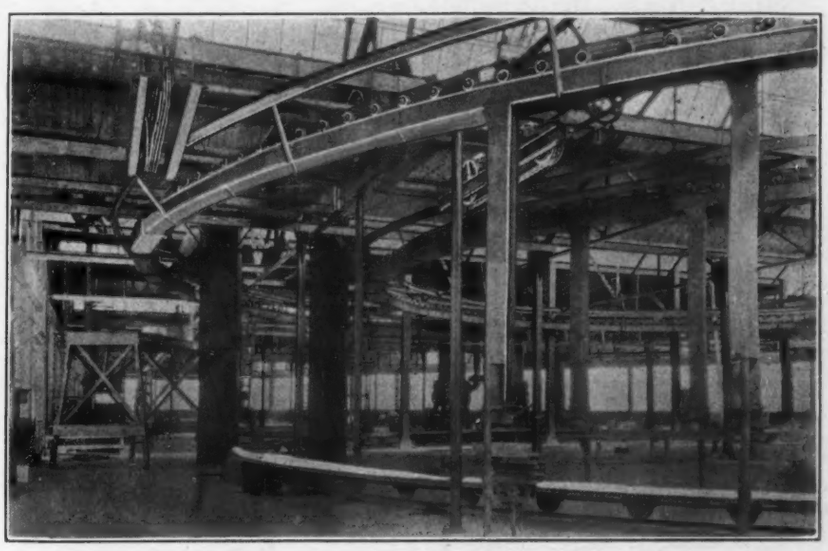


FIG. 5—THE SAND CONVEYORS, SHOWING THE ROPE DRIVE

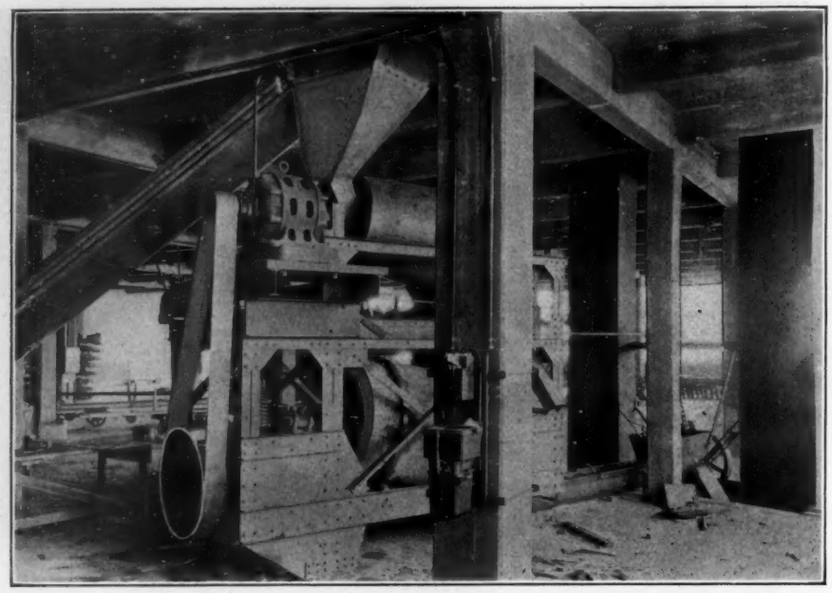


FIG. 6—THE MOTOR-DRIVEN SAND MIXER

tinuous molding system have already been explained. Fig. 15 shows a cross-section of the circular table, giving the principal dimensions. The wheels run in roller bearings and the axles are hollow. There is a grease cup on the end of each axle which forces the lubricant to the bearing surface. The journals are perfectly tight and sand proof.

In order that the turning moment which drives the table may be equally distributed and not tend to drive it off the track, the motor from which the power is obtained is placed exactly in the center of the circle, being suspended from beams underneath the floor. The motor shaft extends across the full diameter of the table underneath the floor, terminating at each circumference. At each end of this shaft is a worm, meshing with a worm wheel that is in turn connected to a sprocket carrying a short, endless chain. One end of the chain runs around an idler sprocket. The chain engages the teeth of a rack which is bolted securely to the moving table, as indicated in Fig. 15. This rack is in reality a gear, 85 feet in diameter and about four inches circular pitch. Two chains take the place of ordinary pinions, and are more satisfactory than pinions since they distribute the load over a number of teeth. The table is, therefore, driven at two diametrically opposite points from a single motor. The motor is only 7½ horsepower, less than five of which are used in ordinary operation. The speed of the table can be regulated by an attendant stationed at the center of the circle, according to the work of the men pouring off the molds. But under normal conditions the table operates steadily with a peripheral speed of 28 feet per minute.

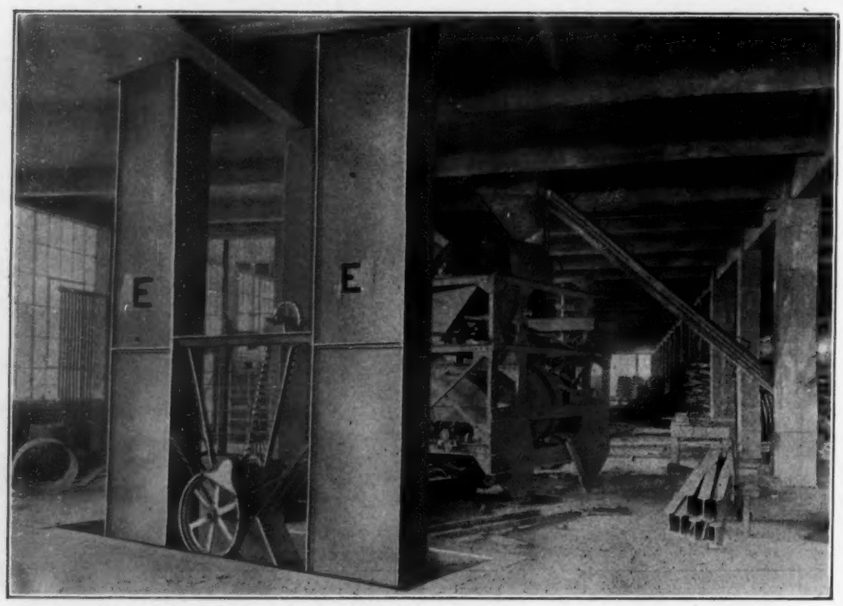



FIG. 7—SAND ELEVATORS WITH THE MIXER IN THE BACKGROUND

About half the circle is devoted to molding and along this portion are 42 sand chutes to the molders' stations, 25 from the outer conveyor and 17 from the inner. Each spout is 9 x 9 inches inside and has at the bottom a double undercut discharge gate controlled by a hand lever.

### Molding Machines.

A molding machine is placed in front of each sand chute. The sand drops onto a table directly under the chute, from which the molder sweeps it into the flask. Stripping plate machines are used. At the side of each molder is a small bench for carrying cores, blacking, tools and miscellaneous supplies. The circular table is nearby and the workman can place his mold on it without moving out of his tracks.

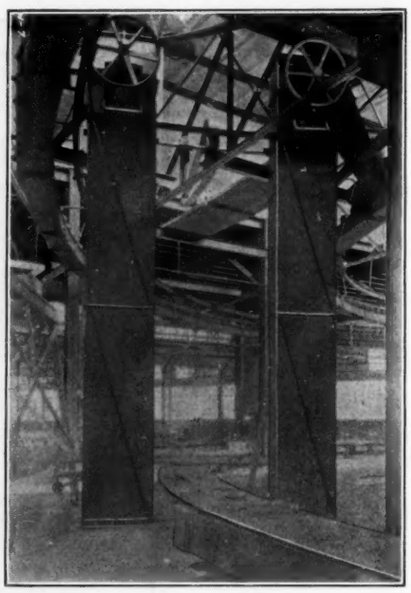


FIG. 8—ELEVATORS WHICH DELIVER THE SAND TO THE SAND CONVEYOR

At each molder's station is a gas outlet terminating in a burner which is kept lighted beneath the molding machine. The heat from the burning gas causes the patterns to strip better.

After the molder places his flask on the moving table his interest in it ceases. The flasks are numbered and each man constantly uses the same ones. Only six flasks and follow-boards per man are required.

When the molder places a flask on the table he lays a brass check on top of it. The checks are collected and assorted by a boy stationed near the pouring section; thus a record is kept of each man's production. The molders, of course, are paid on a piece-work basis.

About 60 degrees of the circle are utilized as the pouring zone and about 45 degrees are reserved for cooling. As mentioned, previously, only four men are required to pour off.

**Shaking-Out.**

At the point where the molds are shaken out, *S*, Fig. 13, a bar or sweep is placed across the table at an angle of 45 degrees. It is provided with short vertical rollers so that the flasks will slide against it easily. In striking this bar the flasks are swept from the outer edge of the table and are caught by a man, provided with a suitable air hoist, who is stationed at this point. He dumps the mold bodily into the open end of a tilted tumbling barrel and places the empty flask back on the table to be returned to the proper molder. The tumbling barrel separates the castings from the sand; the former slide down a chute to the cleaning room below and the sand falls through a grating into a hopper under the tumbling barrel.

This hopper leads to the sand screening and mixing machine, Fig. 6. The machine is of the standard type, provided with revolving riddles and spiral conveyors. One of the spiral conveyors is open at the top. Over this conveyor is led a brass pipe perforated along its under side. Water for tempering the sand drips out through the perforations and by means of a conveniently located valve the quantity added to the sand can be accurately gaged.

A proper amount of new sand is added in the machine and the mixture is delivered to the boots of Webster twin, steel encased elevators, *E*, Fig. 7, which extend upward through the floor above to feed the inner and outer circular sand conveyors, as shown in Fig. 8. Gates operated from the molding floor are provided in the boot spouts so as to regulate the delivery of sand to the elevators. The lift is approximately 42 feet. The elevators are geared to an electric motor, belted to a countershaft and miter geared at each end to the head gearing.

The sand conveyors into which the elevators discharge are of the simple drag type, Fig. 14, with plate steel flights and a trough of cast iron built in sections about six feet long. The trough is 14 inches wide and eight inches deep inside and the flights are spaced 16 inches apart.

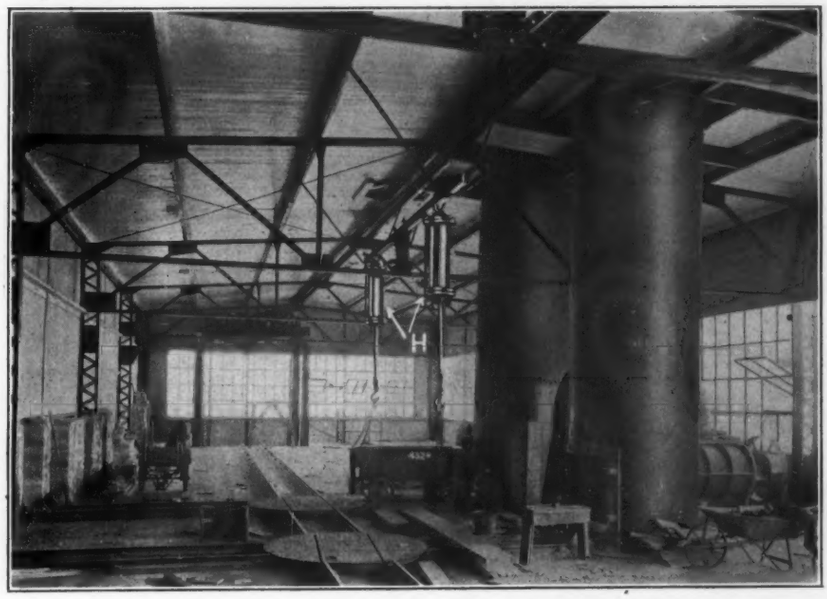



FIG. 10—A VIEW OF THE CHARGING FLOOR, SHOWING ONE OF THE CHARGING BUGGIES IN FRONT OF THE CUPOLA DOOR

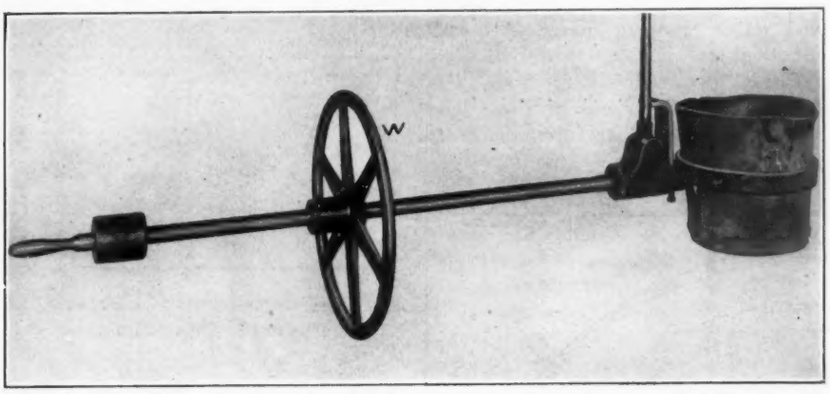



FIG. 9—ONE OF THE LADLE CARRIERS WHICH IS SUSPENDED FROM A TROLLEY

FIG. 11—A VIEW OF THE CORE ROOM, SHOWING THE CORE OVENS

FIG. 12—A SECTION OF ONE OF THE STEAM HEATED CORE OVENS, SHOWING THE ARRANGEMENT OF THE STEAM COILS

Each flight is rigidly secured to a ¾ x 3-inch steel bar, which, being built in sections laid end to end, forms the continuous moving circular member of the conveyor. At every flight is a cross bar with a flanged wheel at each end running on rails formed by angle irons laid along the top edges of the trough. These wheels support and carry the flights and other moving parts. At each flight there is also an outwardly facing, V-grooved jaw or cable grip, *G*, Fig. 14. The circle of these jaws, which are spaced at intervals of 16 inches entirely around the conveyor, forms a sheave receiving a wire rope by which the conveyor is operated. Fig. 13 indicates the arrangement of these wire rope drives which derive their power from a single electric motor. The conveyors make one revolution in 7½ minutes; the outer one is 102 feet in diameter, measuring to the center of the trough, while the inner one has a diameter of 68 feet.

The supply of sand is kept somewhat in excess of the maximum required for the molders so there is always a little carried past the last discharge spouts and on around to the tail discharge spouts near the elevators. By observing the tailings from these spouts it is possible to regulate not only the total supply of sand but also the division of the total between the two sand conveyors. The continuous movement of the conveyors enables the elimination of a multiplicity of working and wearing parts necesary in the reciprocating

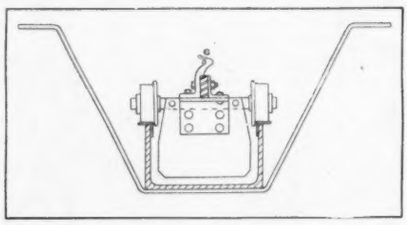


FIG. 14—CROSS-SECTION THROUGH THE CIRCULAR SAND CONVEYOR

type of conveyor, which is common in work of this sort.

A general view of the core room is shown in Fig. 11, and the detail of one of the ovens is illustrated in Fig. 12. The core room is 64 feet long and 80 feet wide, and is equipped with seven ovens and eight coremakers' benches, each bench accommodating six persons. The cores are made by women and a special wash room and lavatory is provided for their convenience underneath the core room. A light, hand buggy, illustrated in Fig. 11, is used for handling the cores. The hub cores, which are shown in the foreground in Fig. 11, and also on the middle shelf in Fig. 12, are made from a simple mixture of clay wash and core sand.

Instead of heating the ovens by coke or gas, live steam is used. The steam pipes in each oven constitute the shelves on which the cores are placed, as indicated in Fig. 12. Each oven is 16 feet long, 5½ feet wide and 6 feet, 4 inches high. It is divided into six compartments, three on

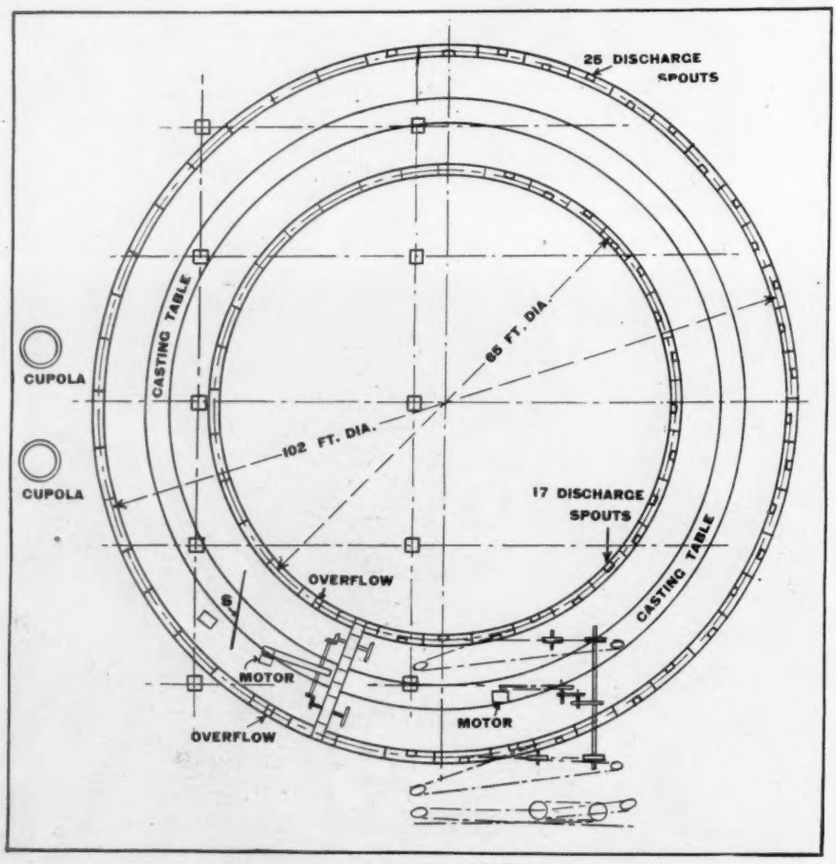



FIG. 13—PLAN VIEW OF THE CIRCULAR TABLE AND SAND CONVEYORS

each side. The compartments, Fig. 12, are five feet wide, five feet high and 2½ feet deep inside. The arrangement of the steam piping is clearly shown in Fig. 12. There are 11 one-inch pipes in each coil or shelf, and assuming that the whole surface of each pipe is available for radiation, each oven compartment is provided with approximately 48 square feet of radiating surface. To attain the requisite temperature, the pipes are fed with live steam at a pressure of 115 pounds per square inch. The bottom coil in each compartment terminates in a drain pipe, *D*, Fig. 12, which leads to a steam trap at the back of the oven.

### Cleaning Department.

As has been previously stated, the finishing and cleaning departments are on the ground floor, underneath the molding room. The chute, which conveys the castings from the molding

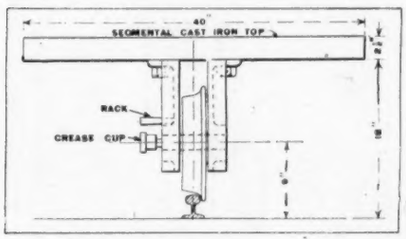



FIG. 15—CROSS-SECTION OF THE CIRCULAR MOLD TABLE

floor, is shown at *C*, Fig. 16. A concrete table, *T*, with a sand bed is placed at the lower end of the chute to receive the castings. Immediately behind the table are 16, 35 x 45-inch tumbling mills, arranged in two groups of eight mills each. Each group is belt-driven through the counter shafting from an electric motor suspended from the ceiling of the room. Four I-beam mono-rails extend from the receiving table, *T*, over the tumblers, and the castings are carried from the table to the tumblers in self-dumping steel buckets, as shown in the illustration. The dust from the tumblers is collected in two 364-unit dust arresters.

### Emery Grinders.

Behind the tumblers are a row of seven double emery grinders, Fig. 18. Each emery wheel is thoroughly protected and provided with an exhaust connection which effectually removes all the dust. The grinders are driven through a countershaft by a single Westinghouse, three-phase

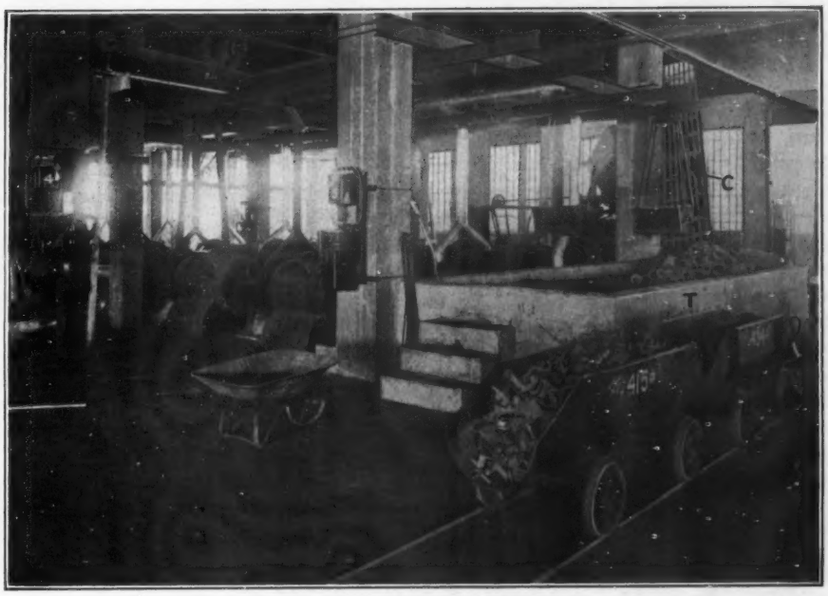



FIG. 16—A VIEW OF THE GROUND FLOOR OF THE FRENCH & HECHT FOUNDRY, SHOWING THE TUMBLING MILLS AND THE TABLE FOR RECEIVING THE CASTINGS FROM THE MOLDING FLOOR

motor, *M*, Fig. 18. After the castings are ground they are removed in wheelbarrows or small carts and are prepared for shipment to the assembling department.

For the convenience of the workmen an excellently equipped locker room and lavatory is placed on the second floor, adjacent to the core room. On the first floor, underneath the core room, is a fireproof pattern storage vault, 100 x 80 feet in size. It is connected with the molding floor by an electric elevator and is provided with metal shelves. The wood and metal patterns are stored separately.

The foundry was designed and built under the supervision of J. L. Hecht, of the firm of French & Hecht. The circular mold conveyor, the sand-handling apparatus and several small conveyors in the shop were built by the Webster Mfg. Co., Tiffin, O., from its own designs made with the advice and co-operation of the owners of the plant. The molding machine equipment was obtained largely from the old foundry operated by French & Hecht, and a large number of machines were furnished by Henry E. Pridmore, Chicago, and the E. Killing's Molding Machine Works, Davenport, Ia.

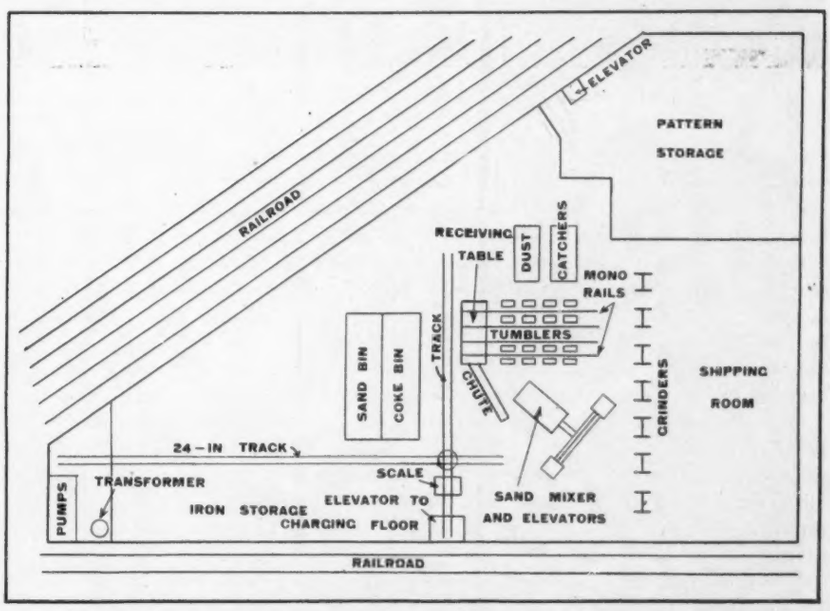



FIG. 17—GROUND FLOOR PLAN OF THE FRENCH & HECHT FOUNDRY

## Experiments With Motor Truck Hauling

The Scully Steel & Iron Co., Chicago, has recently conducted some interesting experiments in the use of motor trucks for hauling heavy iron and steel products. The Scully company conducts a large iron and steel warehouse, carrying in stock for immediate delivery, a large supply of plates, beams, angles, etc., together with numerous specialties. In connection with this business, a highly organized, efficient delivery system is a necessity and the experience of the Scully company with motor trucks is of especial value to the trade.

The truck which was used in the experiments is an old model, five tons capacity, equipped with a 4-cylinder, 2-cycle engine. The bed is 16 feet in length and 74 inches in width over all. The cost of a truck for experimental purposes was avoided by hiring the truck and its driver at the usual ton rate, thus placing it in direct competition with teams doing the same work. Under this arrangement the truck was operated at its driver's expense, and its practicability determined by its ability to compete successfully with teams.

From operations extending over a period of three months, it has been found that for hauls in excess of four miles the truck will do the work of three teams at a cost slightly in excess of the cost of two teams.

A 5-ton truck can be operated for approximately $12.50 per day. The average daily cost of a team is about $6. The truck must, therefore, do a little more work than two teams to be on an even basis with them. The advantage of the truck lies in its ability to work rapidly and to make successive trips without tiring. When conditions are such that they prevent its covering double the distance covered by a team with the same load, it will be operated at a loss. This condition prevails in making short delivery hauls, and in depot work.

The truck used by the Scully Co. has the engine directly under the driver's seat, thus allowing the load to be distributed equally between the front and rear axles. As between this type and that having the engine in front of the seat and over the front axle, the experiments indicated that the latter type is the more advantageous. In carrying heavy plates or beams it is thought that the engine in the latter type will suffer less from vibration and jolting than when placed under the seat. Also in handling bulky plates and long beams or girders, it is easier to distribute the load properly with the engine in front since the center of distribution is nearer the rear axle. Where the engine is under the seat the center of distribution will come at about the center of the bed, and bulky pieces and long reach material cannot be placed far enough forward to bring the center of gravity of the load where it should be without interfering with the driver's seat. The fact that heavy pieces of steel must be loaded with hoists or cranes and cannot be easily shifted about on the truck also makes it easier to distribute the load nearer the rear axle than the center of the bed.

The Scully Co. has found no difficulty, except as stated, in handling anything within the capacity of the truck Plates 20 x 25 feet have been carried without trouble, and beams up to a length of 20 feet. It is thought that with a truck carrying the load on the rear axle, longer beams and bulkier pieces could be handled.

Under present conditions, the old model used in these experiments will, by doing the work of three teams at the cost of two, effect a saving of almost 30 per cent on hauls in excess of four miles. It is thought that with a late model truck, operated by the company, even a greater saving on hauls of this character may be effected.

Based on the experience of the experimental work, the Scully Steel & Iron Co. has purchased a Saurer truck of five tons capacity.

FIG. 18—A VIEW IN THE CLEANING DEPARTMENT, SHOWING THE DOUBLE EMERY GRINDERS

A new and important discovery of iron ore has recently been made in Austria-Hungary. The deposits contain from 42 to 56 per cent metallic iron and are said to be rich in hematite, brown and manganiferous ores, and appear to belong to the known series of deposits extending from Kaschau to Dobsina, from which over 600,000 tons of ore are yearly mined and exported for consumption by the Upper Silesian iron plants.

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Of the total production of anthracite coal, in 1910, 4,184,629 tons were recovered by washeries, from the old culm banks, and 91,833 tons were recovered by dredges from the bed of Susquehanna river.

# An English Electrically-Driven Rolling Mill

## Detailed Description of the Powerful Electrical Equipment—Cogging, Roughing and Finishing Stands Driven by One Motor

The development of the gas engine to the point of efficiency where it affords the most economical means for the utilization of the waste gases of the blast furnace is responsible for the rapidly increasing use of electric drive in rolling mills. The direct transformation of gas energy into electricity not only permits of the concentration of the power plant, but also effects a considerable economic advantage, as a definite volume of gas yields three times the power when its explosive force is utilized, than when burned under boilers.

An English example of this economical use of blast furnace gas is furnished by the new rolling mills of the Skinningrove Iron Works, recently described in *Engineering*, of London, Eng. This plant is located at Yorkshire, Eng. Electric power is used for driving the rolls, the electricity being generated by alternators driven by engines operated by blast furnace gas. A new application of blast furnace gas in England, adopted by these works, is that of heating the soaking pits. Steel is made by the Talbot process, direct metal being used from the blast furnaces. The distance from the cogging mill to the soaking pits is 300 feet, and the ingots are delivered to the mill from the pits by an electrically-driven ingot buggy. The ingots are rolled down to the finished sections without being reheated, and this is largely made possible by the speed at which the electrically-driven, 36-inch reversing rolling mill is operated.

### Electrical Equipment.

Siemens-Ilgner electrical equipment is used for driving the reversing mill. This system has already been applied to 22 reversing mills in other works. The rolling mill consists of a 36-inch cogging stand, 36-inch roughing stand and a 36-inch finishing stand, arranged in tandem and driven by one reversing mill motor. The mill has a capacity for rolling ingots weighing from two to four tons, into rails, beams and angles and its capacity is about 30 tons an hour. If a larger output should be required a second reversing motor can be installed at the opposite end of the mill to drive the roughing and finishing stands. In this event, the spindles coupling the cogging mill to the finishing mill would be removed. The reversing motor, shown at *A*, Fig. 2, is of the direct current type, and is direct-coupled to the bottom pinion of the mill. In the foreground, Fig. 2, is shown the fly wheel motor generator set consisting of a three-phase driving motor, two direct current, variable voltage dynamos, and a pair of heavy fly wheels. This set is interposed between the power house and the mill motor, and owing to the stored energy of the fly wheels, the demands upon the power house can be maintained at a small steady value, although the mill motor may be taking, intermittently, a very large amount of power. The speed of the reversing motor can be controlled also by varying or reversing the direction of the current in the fields of the variable voltage dynamos, so that there is no loss of power in controlling the speed of the mill motor, and the size of the controlling mechanism can be main-

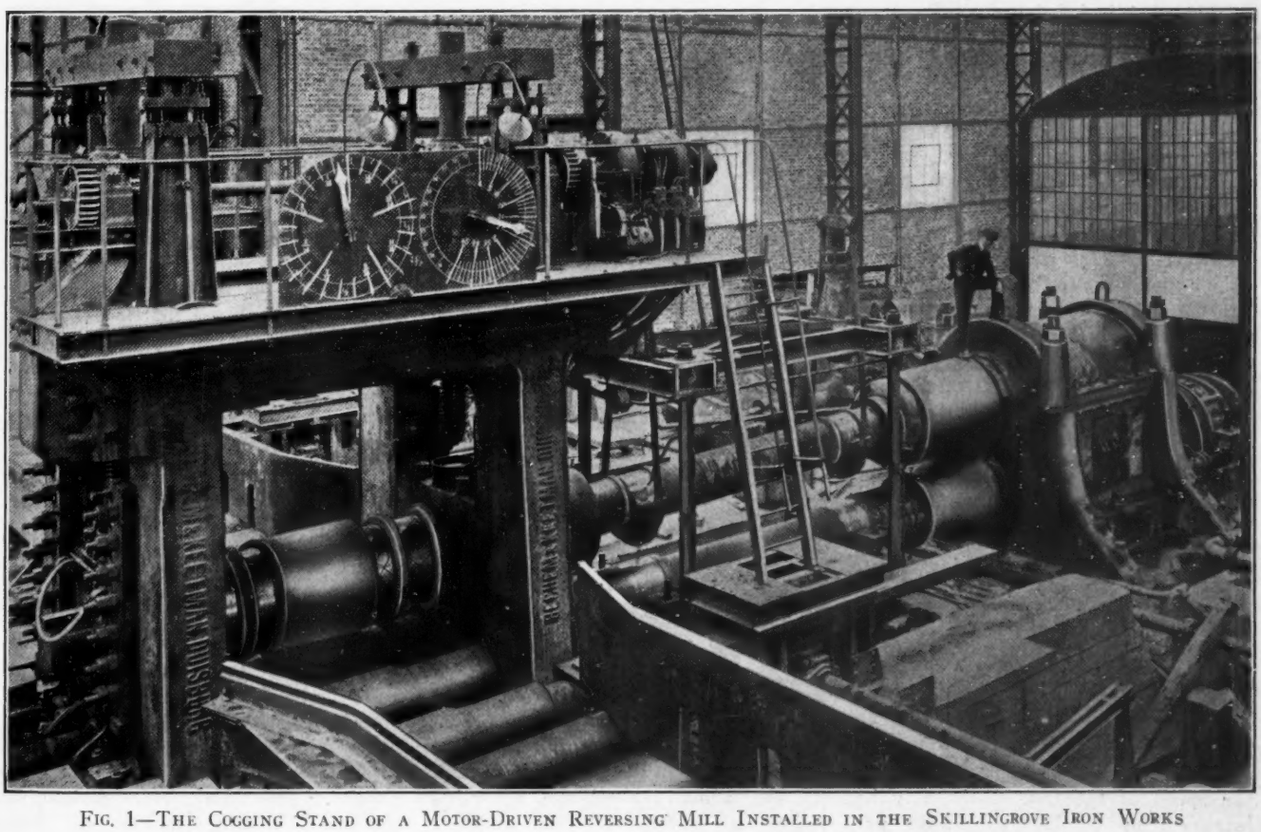

FIG. 1—THE COGGING STAND OF A MOTOR-DRIVEN REVERSING MILL INSTALLED IN THE SKILLINGROVE IRON WORKS

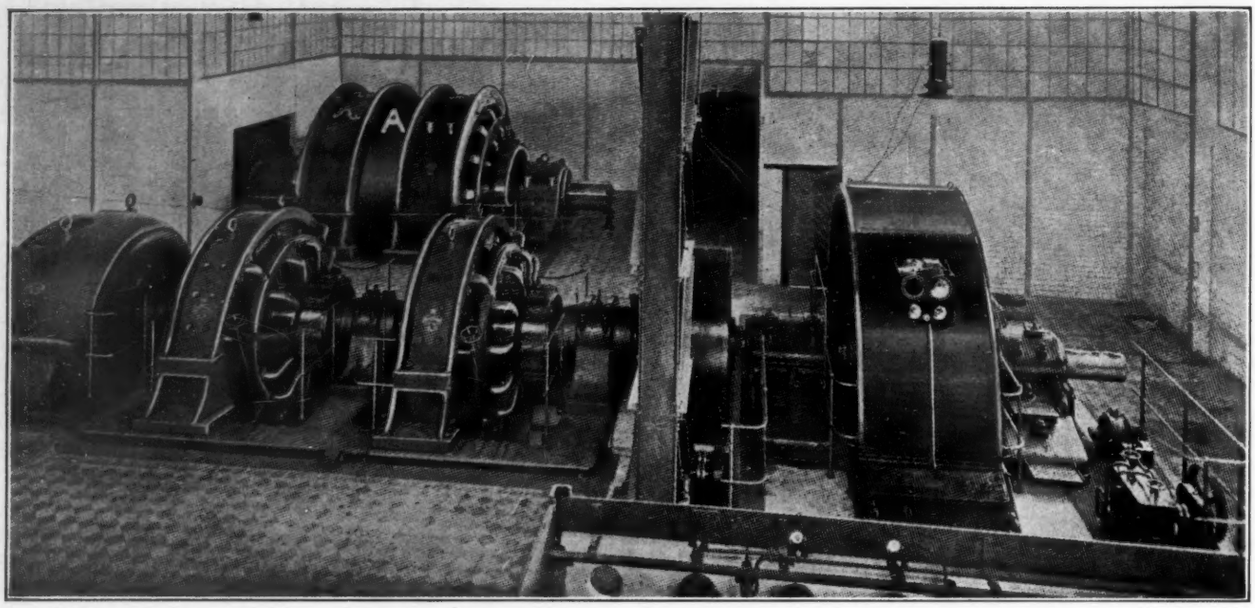

FIG. 2—REVERSING MILL MOTOR AND THE FLY WHEEL MOTOR GENERATOR SET

tained at the minimum. If some adaptation of the ordinary form of motor starter were made for starting and stopping the mill motor, it is obvious that it would be very large and cumbersome, as the electric current exceeds 8,000 amperes, and it would be impossible to stop quickly. Furthermore, as the reversing motor is reversed, under normal conditions, 10 to 20 times a minute, the loss of power in the starter would be about as great as that absorbed by the work. The use of the motor generator set eliminates these difficulties.

### The Reversing Motor.

The reversing motor is a double armature machine with a normal turning moment of 312 foot-tons, and a maximum turning moment of 475 foot-tons at all speeds up to 60 revolutions per minute, when the armatures of the variable voltage dynamos are connected in series. At 60 revolutions per minute the corresponding outputs are 8,000 and 10,000 horsepower, respectively. To permit of obtaining larger turning moments at slow speeds during the first few passes in the cogging mill, the two armatures of the variable dynamos can be arranged in parallel by a movement of the controlling gear, when a normal turning moment of 425 foot-tons and a maximum turning moment of 520 foot-tons can be obtained at all speeds up to 30 revolutions per minute. To provide for the finishing passes, for which large turning moments are unnecessary, but for which high speeds are required, the speed of the mill motor may be increased up to 120 revolutions per minute by reducing its field current, the turning moment being gradually reduced as the speed increases to 137 foot-tons at 120 revolutions per minute.

The speed of the mill motor can be increased up to 60 revolutions per minute in one second, permitting of remarkably rapid reversal and thereby materially increasing the tonnage of the mill.

To obtain this rapid reversal, the

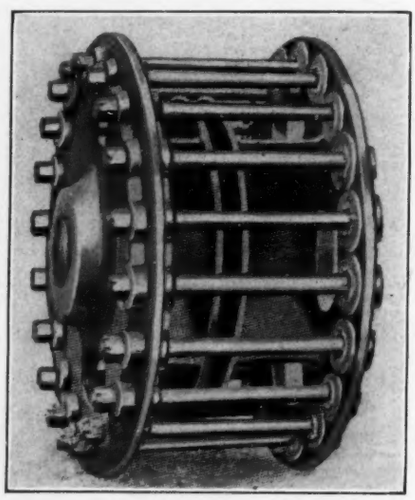

FIG. 3—THE NEEDLE COUPLING

fly wheel effect of the motor armature must be kept as low as possible, and to accomplish this the motor is built with two armatures coupled together and carried in two bearings. This permits of a reduction in the diameter of the armature while the active length is increased. As the armatures of the reversing motor are rapidly reversed and are seldom operated at full speed, the ventilation is not so efficient as that of armatures that are constantly running at full speeds, and to overcome this difficulty, motor-driven fans are provided to provide forced draft ventilation. The arrangement of the fans is shown in the sectional elevation, Fig. 4. The current of air is introduced in the motor between the two armatures and is so conducted that a part passes radially through the armature and through the field coils while the remainder circulates under and through the commutator. A commutator is provided for each armature and each commutator is constructed in two parts, separated by a space of about two inches, so that the cooling air passes outwardly through this space. This commutator construction gives four points of support to the commutator bars instead of two in the ordinary type. The strength is increased four-fold by this construction, and owing to the short length of the bars and the efficient cooling, the possible expansion of the bars is reduced to a minimum, insuring good commutation under the most severe conditions.

### Reversing Motor.

The reversing motor is provided with commutation poles and compensating windings. As the motor is constantly starting and stopping, it is not possible to rely on oil rings for properly lubricating the bearings, and, therefore, two motor-driven pumps are provided for flooding the bearings with oil, one being provided for emergencies. The approximate weight of the reversing motor is 194 long tons.

It is 27½ feet long by 14 feet wide, and the shaft is 30 inches in diameter at the largest part. Each armature is wound for 530 volts, so that the maximum voltage supply is 1,060. The maximum current is 8,400 amperes. The fly wheels of the motor generator set, Fig. 2, are connected to the electrical machines by a flexible coupling of the steel needle type, Fig. 3. This avoids possible difficulties of securing proper alignment, which might occur owing to the weight of the fly wheels, and the length of the fly wheel motor generator set, which is about 50 feet.

### Fly Wheels.

Two fly wheels are employed, mounted side by side, and supported by two bearings. Each wheel weighs 23 tons, is 12 feet, 6 inches in diameter, and at the maximum speed of 475 revolutions per minute, the peripheral speed is 19,000 feet per minute. The stored energy of the two fly wheels is 178,000 horsepower seconds.

Each wheel is a steel casting having a solid web and no spokes, and is machined all over and carefully balanced to secure both equal distribution of weight and homogeneity of material. The two-fly-wheel arrangement was adopted to avoid the difficulty of transporting a single solid wheel weighing 46 tons. The windage of the fly wheels caused a certain loss of power, which added to the friction of the motor generator set, and the most effective means of reducing this loss was found to be that of placing a sheet metal casing around the outside of the rims of the fly wheels. Practically all the windage of such a fly wheel is caused by the outside surface of the rim, and the sheet metal casing prevents the air from being driven away by the fly wheel, thus avoiding fan action and reducing the loss due to windage to a minimum. Some of the earlier types of fly wheels were entirely encased in sheet metal, but this has been found to be unnecessary. One fly wheel was built to run in a cast iron case from which the air was exhausted, so that the wheel ran in a vacuum. It was found, however, that more power was required to maintain the vacuum than was saved by reducing the fly wheel windage.

### Steel Needle Coupling.

The steel needle coupling, Fig. 3, consists of two steel discs about four feet in diameter, one of which is keyed to each of the shafts. The discs are connected together by 44 nickel steel rods arranged around the periphery of the discs, and whose axes are parallel to the axis of the shaft. These nickel steel rods are rigidly bolted to one disc. The steel needle coupling transmits about 12,000 horsepower at speeds varying between 475 and 380 revolutions per minute. Such couplings have been found to work satisfactorily when the shafts which they connect are considerably out of line.

The three-phase motor driving the fly wheel motor generator set has a normal output of 1,825 horsepower on a three-phase, 40-cycle circuit of 2,650 volts and is provided with a slip ring rotor. The fly wheels prevent the power taken from the power station from varying. The reversing motor may be speeded up to 12,000 horsepower for a few seconds and then may require no power for a number of seconds, while the motor driving the motor generator set is taking a steady power of slightly less than 1,825 horsepower from the power house. The speed of the fly wheels must fall when the reversing mill motor requires increased power in order that the fly wheels can give up some of their stored energy, and must rise again when the mill motor requires no power, so that the constant power supplied by the power house may be used to restore the stored energy of the fly wheels. The speed of the fly wheel motor generator set rises and falls between 475 and 380 revolutions per minute, or 20 per cent, rendering 36 per cent of the stored energy of the fly wheels available for neutralizing variations in power.

The average power required to drive the reversing rolling mill varies with the sections rolled and the tonnage obtained. To permit the motor relay to keep the power taken at an average value, the series transformer is wound with a number of separate coils connected with a dial switch.

By moving this dial switch, the ratio between the motor relay and the current of the main motor can be altered, and the motor relay can be set to maintain various average currents in accordance with the requirements of the reversing mill. The mill motor is controlled from the operator's platform by two levers

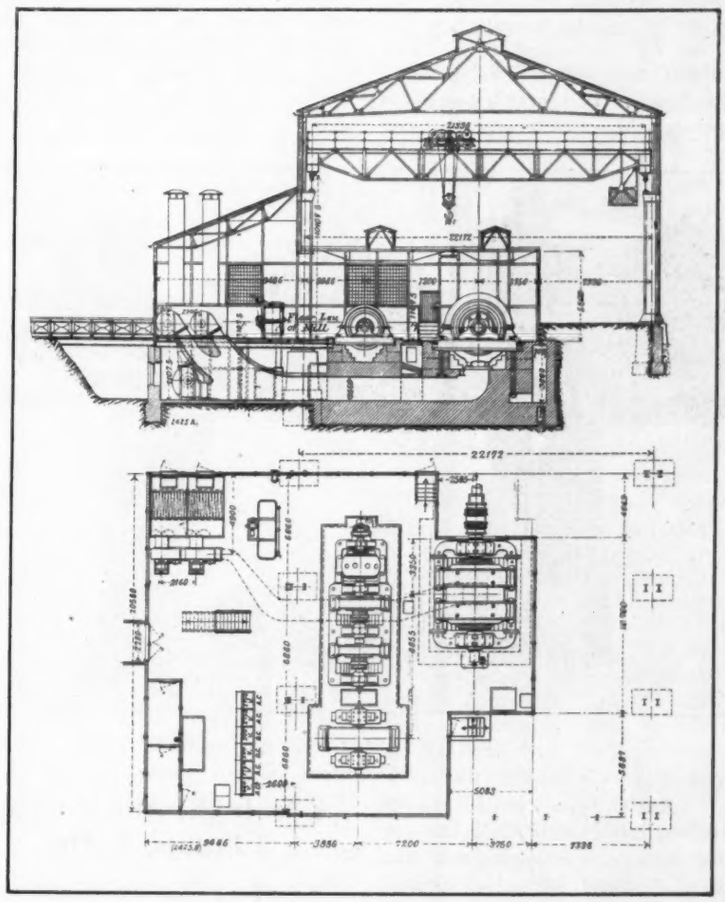

FIG. 4—SIDE ELEVATION AND PLAN OF THE ELECTRICAL PLANT FOR DRIVING THE REVERSING MILL

in quadrant frames. One is the main control lever and the other is the emergency lever. The main lever controls the direction of rotation and the speed of the mill motor by varying the resistances in the field circuits of the variable voltage dynamos and of the reversing motor. When this lever is in the middle position the mill is at a standstill. As it is moved in one direction from the middle point the speed of the motor is increased, and when moved in the opposite direction from the center, the motor reverses, the speed increasing with the movement of the lever from the center. All the control levers are placed opposite the cogging mill. In the event of the average current being set to correspond to a small mill output, and the latter is suddenly increased without a readjustment of the current, the extra power required would have to come from the fly wheels, which would become exhausted after a few ingots had been rolled. To avoid this, a magnet-operated stop is brought into action when the speed of the motor generator sinks below 380 revolutions per minute and prevents the lever from being moved more than half way from its middle position. The mill is then driven slowly until the motor has regained its speed, or until the current is set to a value corresponding to the increased output. The emergency lever is used for the purpose of stopping the mill suddenly, when necessary. It throws the fields of the variable voltage dynamos to zero instantly, and opens the circuit breaker between the dynamos and the mill motor, thus stopping the mill motor and cutting off the power. When this is done the control lever is brought back to the middle position and the emergency lever is replaced before the mill can be started again.

Although a motor generator set is interposed between the reversing motor and the circuit from the power house, a very high efficiency can be secured from this electrical plant, over 70 per cent having been obtained.

The reversing rolling mill was built by the Deutsche Maschinenfabrik, of Duisburg, Germany, and the electrical equipment was furnished by the Siemens Brothers' Dynamo Works, Ltd., Stafford, Eng.

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Further proceeding in separate lawsuits against the Platt Iron Works, Dayton, O., has been enjoined by a court order, pending the adjudication of the bankruptcy matter in federal court.

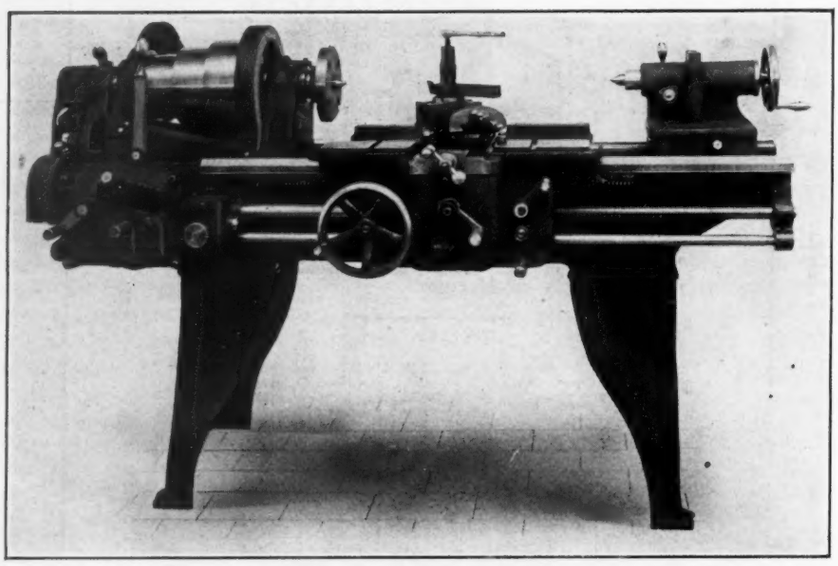

FIG. 1—A QUICK CHANGE, 16-INCH ENGINE LATHE

## A 16-Inch, Quick Change Engine Lathe

A 16-inch, quick change engine lathe which embodies a number of novel features of design and construction intended to increase the productive capacities of such tools, built by the John B. Morris Machine Tool Co., Cincinnati, is shown in Fig. 1. This machine is designed for heavy duty service and is characterized by great driving power. The driving cone, shown in Figs. 2 and 3, is three-stepped, the diameters being 7⅛ inches, 8⅝ inches and 10 inches respectively for a 3½-inch driving belt. The back gears are of the double friction type with ratios sufficient to give ample pulling power on large diameters. The spindle boxes are made of phosphor bronze and are oiled continuously from large oil wells in the pedestals. The front spindle bearing is 2¾ inches in diameter and 4½ inches long.

The headstock is reinforced with longitudinal and cross ribs which extend below the shears of the bed. The reverse plate is carried on the outside of the head and consists of a one-piece casting in which the studs for the gears are supported at both ends. The quick change gear mechanism, Figs. 4 and 5, consists of the usual cone and tumble gear combined with a novel system of sliding gears through which 45 changes of feed or thread leads are obtained with the use of 21 gears. All feed changes are obtained by means of the three levers shown on front of the box, Fig. 4; the one at the left is used only to secure the extreme range, the total range of the machine being from two to 60 threads per inch. The end of the lathe is equipped with the usual quadrant and quadrant gear for connecting up with the spindle, so that it is possible to put on change gears to secure any special thread which might be required, making the machine capable of covering as wide a range in threads as can be obtained on an engine lathe of standard construction.

A new feature in connection with this mechanism is the method of connecting it with the feed rod and the lead screw. This is accomplished by means of a sliding gear operated by a knurled handle and is so arranged that when the lead screw is in operation the feed rod is at rest and vice versa. This construction permits of removing the quick change box from the bed without disturbing the adjustment of the lead screw or the feed rod. The apron is a one-piece casting of box section, with all studs and gears supported in bearings at either end. It is furnished with the usual bevel gear reverse, which mechanism interlocks with the half nut so that it is impossible to engage the lead screw and feed rod at the same time.

To overcome the difficulty frequently encountered in the operation of engine lathes due to the operator's inability to manipulate the revolving knurls for engaging feeds, owing to the high speed at which they revolve, a novel arrangement of clutches is employed. The frictions are of the expanding ring type, five inches in diameter and are engaged by a toggle lever movement which insures ample driving power under the heaviest cuts. The shifting mechanism for these frictions consists of a single crank handle at the front of the apron. When this lever is thrown to the right it engages the

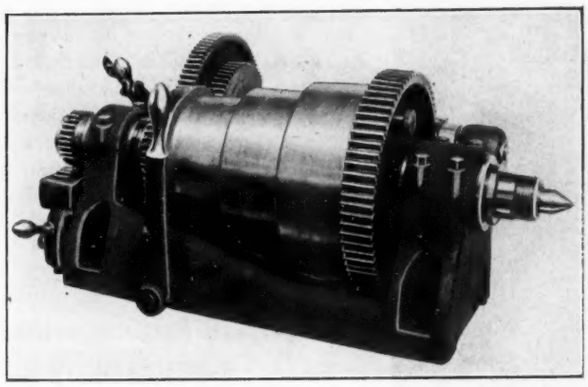

FIG. 2—FRONT VIEW OF THE THREE-STEP CONE AND BACK GEARS

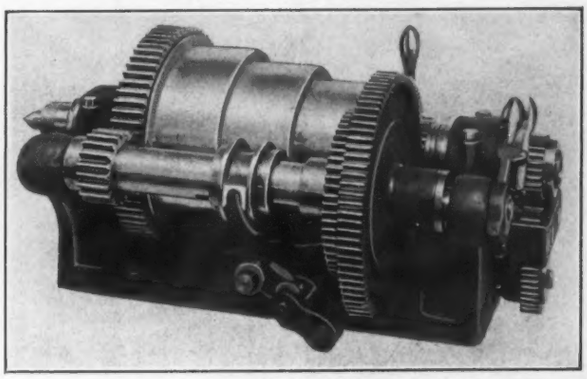

FIG. 3—REAR VIEW OF THE THREE-STEP DRIVING CONE AND BACK GEARS

longitudinal feed and when thrown to the left it engages the cross feed. As this lever is stationary at all times it permits the operator to work up to a shoulder without the necessity of throwing off the feed and running the carriage by hand. A positive stop is provided which makes it impossible to throw the lever from one feed to another without first pulling out the plunger pin in the handle, making it impossible to pass directly from the longitudinal to cross feed, or vice versa.

The carriage has a bearing of 26½ inches on the bed and is carried on a V at the front and on a flat surface at the back of the bed. It is held in position at the back with a long clamp and by two taper gibs at the front which bear on the machined surface directly under the front V. These gibs make it impossible for the carriage to lift or climb the V under any conditions and at the same time will not throw the carriage out of alignment if not properly adjusted. The front V is unusually large, being 1½ inches in width and with the wide flat bearing at the back gives the carriage a large total bearing area.

The bridge is very wide and extends down into the double box section between the shears. As the ways for the tailstock are dropped down below the ways for the carriage it is unnecessary to notch the bridge for clearance. The compound rest is made heavy to withstand the strains imposed upon it by modern high speed steels. The clamping mechanism consists of a V-shaped clamping ring of a similar construction to that usually found on round column radial drills. The tailstock is of box section, the spindle being of steel, 2 3-16 inches in diameter and is clamped by a taper plug of the same construction as that usually found on the over-arm of milling machines. The tailstock is clamped to the bed by two large bolts which extend to the top of the tailstock where the nuts are in convenient position for the operator.

The bed is 11¾ inches deep and 14½ inches wide. The legs are set in from the ends of the bed, thereby shortening the span between supports on the bed and employing the cantilever form of construction. The bed gears throughout the machine are made of steel. This machine under continuous operation will handle a cut ¼ inch deep x ⅛ feed in high carbon steel at a peripheral speed of 75 feet per minute. The lathe swings 16½ inches over the shears and 10 inches over the carriage and with a 6-foot bed the distance between centers is 2 feet, 8 inches. The weight of this tool with a 6-foot bed is approximately 2,100 pounds.

## Casualty Concerns Reduce Milwaukee Rates

Milwaukee, Oct. 24. — Casualty insurance companies carrying the accident liability hazard for Wisconsin employers, have made decided reductions in the rates announced when the new Wisconsin workmen's compensation of industrial insurance act went into effect on Sept. 1. In most cases the reduction applies only to those employers who have elected not to come under the law. On the whole, however, the rate schedule is still kept at the high mark for most classes of manufacturing.

The new classification system will place individual plants on a premium basis according to individual risk The premium is charged according to the number of accidents.

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The E. Killing's Molding Machine Works, Davenport, Ia., manufacturers of a varied line of molding machines, have appointed A. J. Goss, 6506 Perry avenue, Chicago, sales representative in the states of Pennsylvania, Ohio, West Virginia, Kentucky, Indiana, Illinois, Missouri, Michigan, Wisconsin and Minnesota. The Buffalo Foundry Supply Co. represents the E. Killing's Molding Machine Works in the Buffalo district and in towns within a radius of 100 miles of that city.

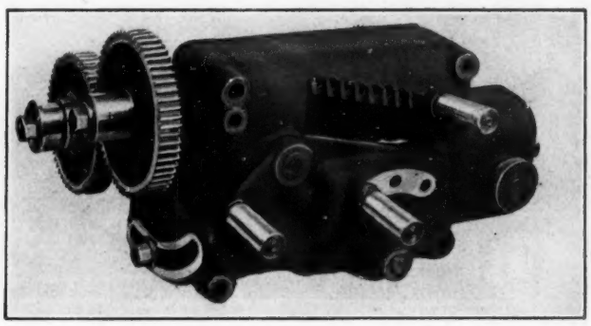


FIG. 4—FRONT VIEW OF THE QUICK CHANGE GEAR BOX, SHOWING THE OPERATING HANDLES

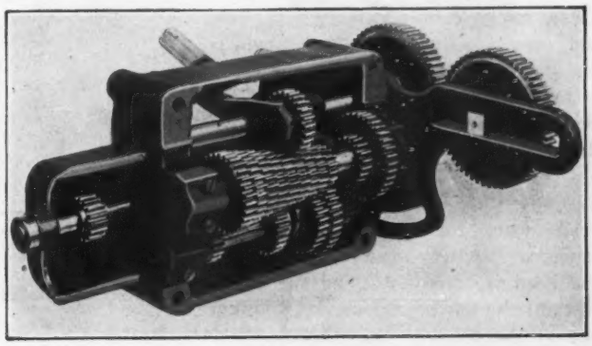


FIG. 5—QUICK CHANGE GEAR MECHANISM

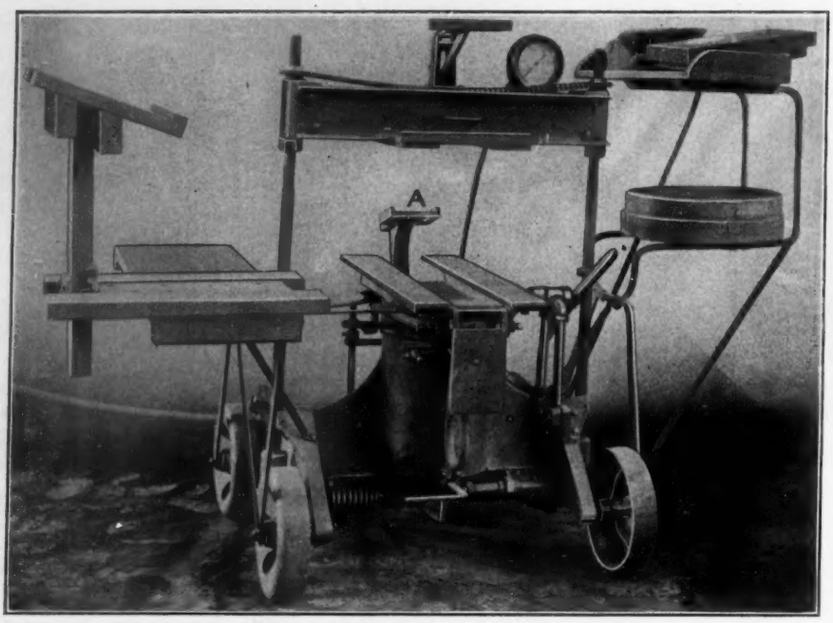



FIG. 1—COMBINED SQUEEZER AND JAR-RAMMING MOLDING MACHINE IN SQUEEZING POSITION

## Combined Squeezer and Jar-Rammer

A portable molding machine for light work, in which the jolt-ramming and squeezing principles of making molds are combined, is now being built by the Arcade Mfg. Co., Freeport, Ill. This machine, shown in Figs. 1 and 2, can be used as a combined squeezer and jolt-rammer or as a simple squeezer for light work and as a jolt-ramming machine without the squeezer for comparatively heavy work.

This machine in position for squeezing a mold, with the head swung forward, directly over the table, is illustrated in Fig. 1, while in Fig. 2 the head has been tilted back in position for jar-ramming the mold. The piston which serves to jar-ram the mold also squeezes the mold with its upward stroke when the head is in its forward position. When the head is thrown forward, the valve controlling the jolting mechanism is closed and the valve which actuates the squeezing movement is automatically opened. When making a mold in which the jolt-ramming and squeezing operations are employed, the flask, after being filled with sand, is jolt-rammed on the table of the machine, the squeezing head in the meantime being tilted back. After the mold has been jolt-rammed and struck-off, the squeezing board is adjusted, the head swung forward and the mold is squeezed. After lowering the piston, the head is tilted back and the pattern vibrator is set in motion by the knee pad at the front of the machine. When the knee pad is operated, the cope rest shown at *A*, Fig. 1, is moved forward and the cope half of the mold is set on this rest while the pattern is being withdrawn from the mold. One of the novel features of this machine is the location of the vibrator in the cylinder. The head is provided with a chain adjustment which engages both nuts on the upper ends of the uprights supporting the head. When raising or lowering the head, these nuts are actuated by the chain and both are given the same number of turns, thereby insuring accurate head adjustment. The machine is provided with every convenience for the operator, being equipped with a stand for holding match-plates and bottom boards at the left and a riddle and tool rack at the right. The head is counterbalanced by a powerful spring to insure its easy backward and forward movement. The machine is portable, being mounted on four wheels, which have wide rims to prevent them from cutting into the foundry floor. This combination squeezer and jolt-ramming machine is built in two sizes with 10 and 14-inch cylinders.

FIG. 2—COMBINED SQUEEZER AND JAR-RAMMING MACHINE IN POSITION FOR JAR-RAMMING A MOLD

## Standard Specifications Compiled

The "1911 Year Book," issued by the American Society for Testing Materials, contains a complete list of the standard specifications adopted by the society, as well as a large number of selected specifications obtained from miscellaneous sources. Compiled in this way, these specifications should prove of great value to manufacturers and engineers for reference purposes. The price of this Year Book is $5, but is furnished the members of the society at a price of $3 per copy. Orders for the book will be filled by Edgar Marburg, secretary, University of Pennsylvania, Philadelphia.

The Buffalo Forge Co., Buffalo, is building the heating and ventilating apparatus for the new stave and heading mill and the tub factory for Armour & Co., which is being erected at Hill City, Minn. The equipment will consist of a 120-inch steel plate exhauster direct-connected to a vertical engine, heaters and a system of air ducts. The tub factory will be equipped with an engine and distributing system.

## A New Reflector for Shop Use

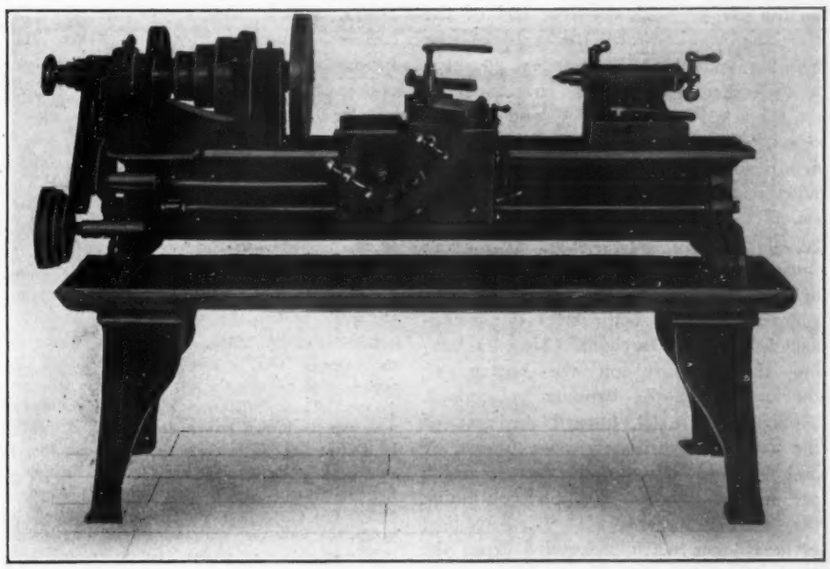
In foundries and mill buildings it is necessary to suspend the lighting units high enough from the floor to clear the traveling cranes. In order to get the proper light distribution from this height, deep cone reflectors are necessary. The National X-Ray Reflector Co., Chicago, has recently designed a reflector, which is especially constructed for the illumination of large rooms with comparatively high ceilings where an even distribution of light is required. The reflector is hung far above the line of vision and throws the light downward to the working plane. The opaque coating on the reflector prevents

A Deep Cone Reflector for Shop Use

loss of light upon the ceiling and walls. It is manufactured of spirally-corrugated, crystal glass, silver-plated on the outside so that the reflection surface does not discolor with age. It is claimed the reflector will retain its brilliancy and high efficiency indefinitely. When fitted with a 100-watt tungsten lamp, this reflector throws a beam of 300 candle-power directly down and gives about 380 candle-power at 30 degrees from the vertical.

## A New Lathe

A new 14-inch lathe, built by the Miami Valley Machine Tool Co., Dayton, O., is shown in the accompanying illustration. This machine is designed to meet the requirements for the lathe equipment of manual training schools, automobile garages, as well as manufacturing plants in general. The actual swing over the bed is 14¼ inches and the hole through the spindle is 1 1-16 inches.



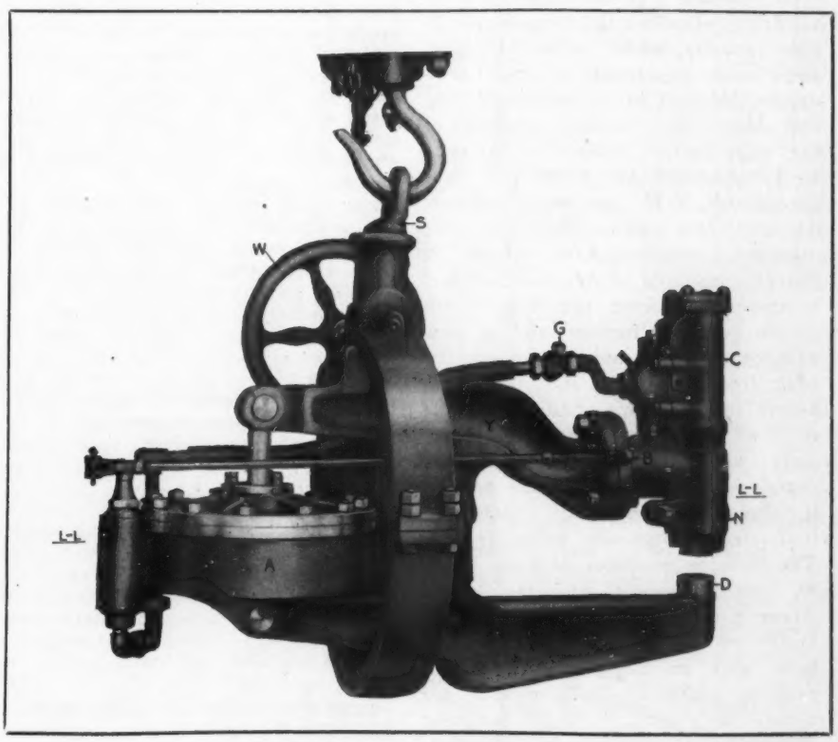
A New 14-Inch Lathe, Built by the Miami Valley Machine Tool Co.

The spindle operates in large phosphor bronze bearings and the carriage has three bearings on the bed, the third bearing providing an additional support to the heavily ribbed cross bridge. This machine can be equipped with draw-in spindle and collets as well as taper attachment, thereby converting it into a high grade lathe for tool room use. The lathe shown in the accompanying illustration is supported on an oil pan mounted on four legs, but it can be also furnished with straight legs without the oil pan if desired.

## Allen Hammer Riveter

In the accompanying illustration is shown a new hammer riveter, built by the John F. Allen Co., 370 Gerard avenue, New York City, which, on account of its short reach and comparatively light weight, is intended for work that is beyond the scope of the regular Allen boiler riveting machines. The reach of this riveter is 15½ inches, and it is sufficiently powerful to drive rivets from ⅜ inch to one inch in diameter.

In operation, the work to be riveted is placed so as to bring the rivet head




The Allen Hammer Riveter

on the die, *D*, with the free end of the rivet pointing toward the axis of the hammer cylinder, *C*. Air is admitted to the cylinder, *A*, by the movement of the handle, *B*. Arms, *X* and *Y*, are closed and the plates to be riveted are firmly secured with a pressure of about 4,000 pounds, between die, *F*, and nozzle, *N*. By pressing the button, *G*, air is admitted to the cylinder, *C*. This causes the hammer to strike the end of the riveter a series of swift blows and the heading of the rivet is accomplished in a few seconds. Upon releasing the pressure on the button, *G*, the motion of the hammer is stopped. Moving handle, *B*, toward the rear of the riveter immediately opens arms, *X* and *Y*, and releases the plates which are moved into position for continuing the riveting operation. The machine is in balance when suspended from the hook, *S*, and can be swung in any direction. It turns on its long axis, *LL*, by means of the hand wheel, *W*, which operates a worm engaging a worm wheel in the supporting ring, *R*. This riveter can be operated with an air pressure of from 60 to 100 pounds.

## A New Electric Steel-Making Process

Steel refined by a new electrical process is used for making castings in the foundry of Le Gallais, Metz & Co., Dommeldingen, Germany. The steel is made from molten basic pig iron obtained from the company's blast furnaces. It is treated first in a tilting open-hearth furnace of 20 tons capacity, which is fired by producer gas generated by two producers, 5½ feet in diameter and 10½ feet high. The finished product of the open-hearth furnace is a mild steel containing about 0.45 per cent phosphorus, 0.40 per cent sulphur, 0.15 per cent carbon, 0.25 per cent manganese and traces of silicon. A charge consisting of 3½ tons of steel is transferred from the open-hearth to the electric furnace and a new addition of that amount of molten basic iron is charged into the open-hearth furnace. This addition is made to the open-hearth charge immediately after each electric furnace charge is tapped out, and the process is, therefore, practically continuous, four electric furnaces being in use. The foundry produces castings up to 10 tons in weight, and the tensile strength of the steel will vary from 51,000 to 64,000 pounds per square inch, with an elongation of 25 per cent, to 85,000 or 90,000 pounds per square inch with 8 to 10 per cent elongation. A special mild steel is made for castings for electrical purposes, which has approximately the following composition: Carbon, 0.05 to 0.06 per cent; manganese, 0.20 per cent; phosphorus, 0.005 per cent, and sulphur, 0.003 per cent.

## New Catalogs

LABORATORY LATHES.—Laboratory lathes for alternating or direct currents are described in a bulletin issued by the Emerson Electric Mfg. Co., St. Louis. These lathes are made in two distinct styles.

GAS PRODUCERS.—A bulletin issued by the Amsler Gas Power Co., Pittsburgh, describes that company's line of suction gas producers. These producers are designed to furnish gas both for power and for fuel, and it is guaranteed that they will deliver 80 per cent of the heat units in the fuel which is fed to them. The bulletin contains diagrams and data concerning the construction of the producers and the method of operating them.

DIRECT CURRENT SWITCHBOARDS.—In a recently issued bulletin, the General Electric Co., Schenectady, N. Y., describes and illustrates its line of 76-inch direct-current switchboards designed for use in small central stations and isolated plants. A portion of the bulletin is devoted to protective equipment which may be selected according to requirements. Connection and dimension diagrams are included.

SINGLE-PHASE INDUCTION MOTORS.—In a recently issued bulletin, the Emerson Electric Mfg. Co., St. Louis, describes its line of single-phase, induction motors, ranging in capacity from 1-10 to ½ horsepower. These motors are condensed types, designed for installation where the thickness of the motor, or dimension parallel with the shaft, is of great importance. They are not designed for continuous duty.

SYNCHRONOUS CONDENSERS.—A bulletin issued by the General Electric Co., Schenectady, N. Y., is devoted to that company's line of synchronous condensers. These condensers have been designed and standardized to meet the demand for a comparatively inexpensive, high speed machine which can be floated on the line for improving the power factor. The characteristics of these condensers, and their use, are fully described and illustrated in the bulletin.

ENCLOSED FLAME ARC LAMPS.—The General Electric Co., Schenectady, N. Y., has distributed a bulletin describing and illustrating its line of enclosed flame arc lamps. These lamps are provided with impregnated or plain carbon electrodes and especial attention is directed to their simple construction. They are so designed as to admit of the use of any of the standard makes of flame carbons. They are made in a number of different designs suitable for all classes of commercial use.

CONTROL APPARATUS FOR STEEL MILLS.—In a recently published bulletin, the General Electric Co., Schenectady, N. Y., describes and illustrates its line of control apparatus for steel mills. The various devices to which attention is directed have been designed with a view to meeting the severe conditions which are encountered in the operation of steel mills. The bulletin describes automatic compensators, contactors, master controllers, rheostatic controllers and other electrical controlling apparatus.

DIRECT CURRENT SWITCHBOARD PANELS.—The General Electric Co., Schenectady, N. Y., has issued a bulletin devoted to direct current switchboard panels, single polarity, for use in small mining plants. These panels are 76 inches in height and are equipped with circuit breakers and other essential features requisite for the safe and satisfactory operation of such plants. They are for use only in stations with a grounded negative. Connection and dimension diagrams are included in the bulletin.

SOOT CLEANING.—G. L. Simonds & Co., Chicago, sales department of the Vulcan Soot Cleaner Co., Du Bois, Pa., have issued a booklet entitled, "Economical Steam Production." It describes the Vulcan system of soot cleaning as applied to all types of water tube and return tubular boilers. The advantages claimed for this system include saving of fuel; saving of labor; saving of tubes, hose, etc.; the elimination of dirt, etc. The booklet contains a number of diagrams which show in detail the working principles of the Vulcan system.

VENTILATED MOTORS. — The Emerson Electric Mfg. Co., St. Louis, has issued a bulletin devoted to its line of ventilated motors, made for direct current, in sizes having capacities of ½ and one-horsepower. The ½-horsepower motor of the semi-enclosed type has been manufactured by the Emerson company for a number of years; the one horsepower motor, however, has only recently been added to the line. Complete information concerning these motors, including list prices, is included in the bulletin.

SWITCHBOARD AND HIGH TENSION RELAYS.—In a recently issued bulletin, the General Electric Co., Schenectady, N. Y., describes its switchboard and high tension relays for alternating and direct current. These include relays for circuit opening, time limit relays, inverse time limit, definite time limit, low voltage, no voltage and over-load, reverse current and other types of relays. The bulletin includes general notes on the use of relays, a diagram of modern power house wiring and busses, information on the location of relays, etc.

PORTABLE ELECTRIC MACHINE TOOLS.—A catalog published by the Hisey-Wolf Machine Co., Cincinnati, describes and illustrates its line of portable electric machine tools. This includes portable tool-post grinders, parallel grinders, internal grinders, buffers, bench grinders, pedestal grinders, aerial grinders, flexible shaft tools, hand or breast drills, two-speed hand or breast drills, heavy duty drills, bench drills, radial drills, glass blocking and marble polishing machines, glass and marble mitering or beveling machines, etc. This company has recently moved into its new plant, Colerain and Marshall avenues, Cincinnati, which was especially designed for manufacturing this line of tools.

FRENCH MOLDING MACHINES.—Ph. Bonvillain & E. Ronceray, Paris, France, manufacturers of an extensive line of molding machines, have issued a new catalog containing 60 pages which clearly illustrates and describes French mechanical molding methods. Hydraulic power is used quite extensively in the operation of the larger type of these molding devices, although a number of simple hand-operated machines are built. The pattern plate process devised by this company with the various methods of procedure is illustrated and described in detail. It is exceedingly simple and can be used to advantage by foundrymen, operating molding machines. Some of the large machines shown are exceedingly interesting, a number being of the rotary type, the entire machine swinging on a shaft to effect the drawing of the pattern. Several of these larger machines have been installed in American foundries.

Security prices on the New York stock exchange last week moved with irregularity, the general trend of the market being upward. Trading was moderately active. The only important outside influence was the news of the impending cancellation of the Steel Corporation's lease on Great Northern ore properties.

Monday, trading was fairly active with irregular price movements; cotton ruled firmer; foreign markets reflected a more cheerful tone. Tuesday, prices registered declines in the early dealings but later recovered; cotton declined below 9 cents, the lowest for years; foreign markets were weak and lower. Wednesday, Steel common broke to 58 and closed at the lowest, weakening the rest of the market; the tone of the foreign markets was improved. Thursday, Steel common declined further, but later recovered to 60; the remainder of the list was irregular but averaged higher at the close; wheat advanced; cotton was quiet with a slight advance. Friday, the list, with the exception of Steel common, was dull and irregular, with prices higher at the close; grain markets were higher; foreign markets were firmer. Saturday the market was reactionary, closing fractionally lower.

Call money was easy, the range being 2½ to 2¼ per cent; time money was extremely dull. The actual condition of clearing house institutions showed loans increased $14,610,000; net deposits decreased $22,759,000; total reserve $420,482,000; excess of reserve $19,303,350, an increase of $5,941,350, and the percentage of reserve 26, compared with 26.3 the week previous. Non-member banks and trust companies showed loans increased $1,820,900; net deposits increased $2747,900; reserve on deposits decreased $2,184,600; and the percentage of reserve 19, against 19.5 the week previous. Bank clearings showed an increase of 19.5 from the previous week, but a decrease of 5.1 per cent from last year. Commercial failures numbered 256, against 241 the preceding week, and 205 the corresponding week last year. Shares were sold to the number of 2,817,600, compared with 1,758,600 the preceding week and 3,563,600 the corresponding week last year. Bonds, exclusive of government bonds, were sold to the amount of $14,383,000, compared with $41,200,000 the preceding week and $16,040,000 the corresponding week last year.

| | Closing Quo. Oct. 21 | Changes in week | Annual Meeting date 1911 | | Stock Outstanding | Basis. | Dividend Last Dividend | Dividend Date Last Div. Pay |
|---|---|---|---|---|---|---|---|---|
| Allis-Chalmers | 3⅛ | +⅛ | | | $19,820,000 | | | |
| Allis-Chalmers, pr | 11¼ | — ½ | Nov. | 2 | 16,150,000 | 7 cum. | 1¾ Q. | Feb., 1904 |
| American Can | 10½ | —¼ | Feb. | 1 | 41,233,300 | | 1¾ Q. | |
| American Can, pr | 86½ | ..... | | | 41,233,300 | 7 cum. | 1¼ Q. | Oct., 1911 |
| Am. Car & Fdy | 48½ | —1⅜ | June | 29 | 30,000,000 | | ½ Q. | Oct., 1911 |
| Am. Car & Fdy., pr | 115 | ..... | | | 30,000,000 | n. c. | 1¾ Q. | Oct., 1911 |
| American Loc | 34½ | —1¼ | Oct. | 17 | 25,000,000 | 5 | 1¼ Q. | Aug., 1908 |
| Am. Loc., pr | 103 | —1⅛ | | | 25,000,000 | 7 cum. | 1¾ Q. | Oct., 1911 |
| American Ship | 49⅞ | — ⅛ | Oct. | 11 | 7,600,000 | 4 | 2 Q.** | June, 1911 |
| American Ship, pr | 106½ | ..... | | | 7,900,000 | 7 cum. | 1¾ Q. | Oct., 1911 |
| Am. Steel Foundries | 30 | —2⅜ | Dec. | 7 | 17,184,000 | | 1 Q. | May, 1911 |
| Barney & Smith | 15 | ..... | June | 6 | 2,000,000 | 4 | 1 Q. | Dec., 1907 |
| Barney & Smith, pr | 70 | ..... | | | 2,500,000 | 8 cum. | 2 Q. | Sept., 1911 |
| Bethlehem Steel | 28 | ..... | April | 4 | 14,862,000 | | ..... | ..... |
| Bethlehem Steel, pr | 55½ | — ½ | | | 14,908,000 | 7 n. c. | ¾ Q. | Feb., 1907 |
| Cambria Steel | 44⅛ | + ⅛ | Mar. | 21 | 45,000,000 | 5 | 1¼ Q. | Nov., 1911 |
| Cambria Iron | 44 | ..... | | | 8,468,000* | 4 | 2 S. A. | Oct., 1911 |
| Chicago Pneumatic Tool | 46 | —1 | Feb. | 20 | 6,485,800 | 4 | 1 Q. | Oct., 1911 |
| Colorado Fuel | 27½ | + ½ | Oct. | 16 | 34,235,500 | | 1¾ Q. | Apr., 1902 |
| Crucible Steel | 10¼ | ..... | Oct. | 18 | 24,578,400 | | 3½ Q. | ..... |
| Crucible Steel, pr | 76 | ..... | | | 24,463,500 | 7 cum. | 1¾ Q. | Sept., 1911 |
| Empire Steel | 5 | ..... | Feb. | 22 | 1,254,770 | | ..... | ..... |
| Empire Steel, pr | 50 | ..... | | | 2,500,000 | 6 cum. | 1 S. A. | July, 1911 |
| Fay & Egan | 70 | ..... | Feb. | 21 | 1,000,000 | 6 cum. | 3 S. A. | Feb., 1911 |
| Fay & Egan, pr | 110 | ..... | | | 1,000,000 | 7 cum. | 1¾ Q. | Aug., 1911 |
| General Electric | 150⅛ | —1⅛ | May | c | 65,179,600 | 8 | 2 Q. | Oct., 1911 |
| Harbison-Walker | 48 | ..... | Jan. | 16 | 18,000,000 | | ½ Q. | Sept., 1911 |
| Harbison-Walker, pr | 99 | +1 | | | 9,600,000 | 6 cum. | 1½ Q. | Oct., 1911 |
| International Pump | 27¼ | ..... | Dec. | 12 | 17,762,500 | | 1 Q. | Nov., 1910 |
| International Pump, pr | 81½ | ..... | | | 11,350,000 | 6 cum. | 1½ Q. | Nov., 1911 |
| Lackawanna Steel | 30 | ..... | Mar. | 4 | 34,978,000 | | ..... | ..... |
| Lake Sup. Corp | 26⅞ | — ⅞ | Oct. | 4 | 40,000,000 | | ..... | ..... |
| New York Air Brake | 53½ | — ½ | Mar. | 8 | 10,000,000 | 6 | 1½ Q. | July, 1911 |
| Niles-Bement-Pond | 94 | ..... | Feb. | 8 | 8,500,000 | 6 | 1½ Q. | Sept., 1911 |
| Niles-Bement-Pond, pr | 104 | ..... | | | 2,000,000 | 6 cum. | 1½ Q. | Aug., 1911 |
| Otis Elevator Co | 68 | ..... | Mar. | 20 | 6,375,000 | 1 | 1 Q. | Oct., 1911 |
| Otis Elevator Co., pr | 95 | ..... | | | 6,310,000 | 6 n. c. | 1½ Q. | Oct., 1911 |
| Pa. Steel | 60 | ..... | May | 8 | 10,750,000 | | ..... | ..... |
| Pa. Steel, pr | 103 | —2 | | | 16,500,000 | 7 n. c. | 3½ S. A. | Nov., 1911 |
| Pittsburgh Coal | 18⅛ | + ⅛ | Feb. | 10 | 28,104,600 | | ..... | ..... |
| Pittsburgh Coal, pr | 80 | ..... | | | 27,071,800 | 7 cum. | 1¾ Q. | Oct., 1911 |
| Pressed Steel Car | 28½ | + ¼ | Feb. | 15 | 12,500,000 | | 1 Q. | Aug., 1904 |
| Pressed Steel Car, pr | 95 | ..... | | | 12,500,000 | 7 n. c. | 1¾ Q. | Aug., 1911 |
| Pullman | 159¾ | +3¼ | Nov. | 8 | 120,000,000 | 8 | 2 Q. | Nov., 1911 |
| Railway Stl. Spring | 27 | —1⅜ | Mar. | 2 | 13,500,000 | 2 | 1 S. A. | Oct., 1908 |
| Railway Stl. Spring, pr | 94 | ..... | | | 13,500,000 | 7 cum. | 1¾ Q. | June, 1911 |
| Rep. Iron & Steel | 22¼ | — ⅜ | Oct. | 18 | 27,191,000 | | ..... | ..... |
| Rep. Iron & Steel, pr | 84½ | —1 | | | 25,000,000 | 7 cum. | 1¾ Q. | Oct., 1911 |
| Sloss-Sheffield | 40 | ..... | Mar. | 15 | 10,000,000 | 5 | 1¼ Q. | Sept., 1910 |
| Sloss-Sheffield, pr | 112 | ..... | | | 6,700,000 | 7 n. c. | 1¾ Q. | Oct., 1911 |
| U. S. Pipe & Fdy. Co | 13¾ | +1⅛ | June | 28 | 12,106,300 | | 1 Q. | Dec., 1910 |
| U. S. Pipe & Fdy. Co., pr | 43 | —2 | | | 12,106,300 | 2 | 1¼ Q. | June, 1911 |
| U. S. Steel | 59¾ | —1⅜ | April | 17 | 508,302,500 | 5 | 1¼ Q. | Sept., 1911 |
| U. S. Steel, pr | 109⅝ | + ½ | | | 360,281,100 | 7 cum. | 1¾ Q. | Aug., 1911 |
| U. S. Steel 5s | 102⅝ | + ⅜ | | | 463,798,000 | 5 | ..... | ..... |
| Va. Iron, Coal & Coke | 60 | ..... | Sept. | 19 | 9,073,680 | | 5. † | Oct., 1907 |
| Westinghouse Electric | 64⅞ | +1⅞ | July | 26 | 3,998,700* | | 1¾ Q. | Oct., 1911 |
| Westinghouse Air Brake | 145 | +2 | Oct. | 3 | 13,750,000* | | 5 Q. ‡ | Oct., 1911 |

Par value of shares, $100, except those starred (*), $50.
**Includes last 1 per cent payment of 4 per cent extra.
†Stock.
‡Includes 2½ regular, 1½ extra and 1 special.

### Copper Stocks.

**New York.**— Amalgamated Copper closed 53⅜, a net gain of 1⅛.

**Boston.**—Butte Coalition closed 16, a net gain of 1; Calumet & Arizona closed 49½, no change; Calumet & Hecla closed 389½, a net loss of ½; North Butte Mining closed 25½, a net gain of ½; Quincy Mining closed 59, a net loss of 1.

### Financial Notes.

The Cambria Steel Co. has declared a regular quarterly dividend of 1¼ per cent, payable Nov. 15.

The National Carbon Co. has declared the regular quarterly dividend of 1¾ per cent on preferred stock, payable Nov. 15.

The Warwick Iron & Steel Co., Pottstown, Pa., has declared the regular semi-annual dividend of 4 per cent.

THE IRON TRADE REVIEW

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THE AVERAGE PAID CIRCULATION OF THE IRON TRADE REVIEW FOR THE ISSUES OF THE FOLLOWING MONTHS WAS:

| | |
|---|---|
| January, 1911 | 6,058 |
| February | 6,072 |
| March | 6,091 |
| April | 6,108 |
| May | 6,112 |
| June | 6,124 |
| July | 6,138 |
| August | 6,152 |
| September | 6,161 |

October 26, 1911

## The Great Northern Ore Lease

Not in years has more important iron ore information reached the general public than the statement that the United States Steel Corporation will shortly serve notice of the abrogation of its Great Northern ore contract through the Great Western Mining Co., the formal cancellation taking effect Jan. 1, 1915. Coupled with this announcement goes the information that the Corporation of its own volition will reduce the charge for carrying ore on its railroads from the Mesabi and Vermillion ranges to Duluth and kindred ports at the head of the lakes, from 80 cents a ton to a flat rate of 60 cents.

Either one of these acts is enough to upset all calculations and preconceived ideas of the status of the new range ore holdings. Both combined will work almost a revolution, vitally involving as they do the most important source of iron ore on the continent at this time, and the cost of getting that ore to the furnace.

The most striking ultimate outcome of the lease cancellation will be that a vast source of supply for ores of the usual Mesabi grades will be thrown open to users other than the Steel Corporation to whom this vast acreage hitherto has been closed. The lease of the Great Western Mining Co., whose performance was guaranteed by the Steel Corporation, covered a total of 39,296 acres, although the Great Northern ore holdings, as a whole, aggregated 65,091 acres, only 1,596 acres having been leased to others prior to Dec. 7, 1906. It is difficult to learn what proportion of the Great Northern ore lands, other than those leased to the Steel Corporation, has ever been leased to others, or its equivalent, which covers the income from that so-called "outside" source. But it was reported in 1907 that the income from that source would amount to between $3,000,000 and $4,000,000. All available information would tend to show that not a large percentage of ore from the Great Northern properties has gone to others than the Steel Corporation up to this year. Hence, as said before, here will be opened to others a vast source of supply.

Another point involved is the amount of ore that the Corporation will remove from the Great Northern properties in the meantime. For, while it is bound to remove a certain tonnage yearly, which minimum since 1907 increased 750,000 tons per annum while the royalty also increased just 3.4 cents a ton each year, yet undoubtedly the Corporation will not allow the excess payment under the lease to operate as a fine for failure of performance, but will actually remove the ore upon which royalty has been paid. That will mean that in 1912, 1913 and 1914 the Steel Corporation will remove a far greater quantity of Great Northern ore in the shipping season and less from its own mines. This will amount to practical conservation of its own ore properties. Since the largest annual amount to be moved under the lease would be 6,000,000 tons in 1914, and since its steamship organization moves about 22,000,000 tons normally yearly, it would not be a difficult proposition to make the Great Northern ore shipments heavier, reduce its own slightly and still carry out the terms of the lease.

The reduction in the railroad ore carrying charges will work almost as important changes in the general iron and steel business, affecting vitally the cost figures of almost every user of new range ores. The freight rate has always been maintained on the new range railroads at 80 cents since it was first established in 1892, Vermillion ores in that year (the only ones then marketed from the new ranges) commanding at lower lake ports $4.50 for Bessemer and $3.65 for non-Bessemer. It was not until the next year that the Mesabi Bessemer ore at lower lake ports was sold at $3 a ton, the non-Bessemer price being fixed in 1895 at $1.90. The Bessemer price in 1895 dropped to $2.15. Ore prices varied, going as high as $5.50 for old range Bessemer in 1900, while the price this year is $4.50, but through all the price changes the freight rate remained the same.

A reduction of 20 to 40 cents a ton in ore freight will mean a saving of 40 to 80 cents a ton on a ton of pig iron, a not inconsiderable item of cost in these days of close selling. It is more immediately important to the general iron and steel trade today than the throwing open to competition of the large holdings of Great Northern ore. But in the longer future, the importance of this entire lease abrogation will grow.

## Spelter and Galvanized Sheet Prices

The average price of spelter at East St. Louis last week was 6.20 cents, or 33 cents per 100 pounds above the average price in September. The last official prices upon sheets, there having been an open market during the past few months,

showed a spread between black and galvanized of $1 per 100 pounds. It is not surprising that the sheet market has lately been showing a larger spread than $1 between black and galvanized, considering the high price of spelter. Premising that comparisons cannot be comprehensive, because the differentials between gages of galvanized sheets rarely change, while changes in the spelter price affect the different gages differently because the gage variation is made in the steel and not at all in the coating, it may be observed that a much larger spread has usually obtained when spelter has been in the neighborhood of the 6-cent mark. Taking a glance at conditions in the past eight years, it may be pointed out that in 1904 the official prices called for a spread of $1 between the black and galvanized sheets, 28 gage, but spelter averaged only 4.85c during that period. The spelter market advanced more or less regularly, and reached an average well above 6.50c in the early part of 1907. In recognition of this fact, an advance was made in galvanized sheets, but not in black sheets, on Jan. 24, 1907, making the spread on 28 gage $1.15. That spread obtained for almost a full year, or until the general reduction of Jan. 6, 1908, and during that period the average price of spelter was 5.90c. This month, however, spelter has been well above that average, and by precedent if black sheets are 1.85c to 1.90c, galvanized should be 2c to 2.05c, whereas the actual market spread is only about $1.05.

In the manufacture of 28-gage galvanized sheets, a change in the price of spelter of 40 cents per 100 pounds effects a change in the cost of making 100 pounds of galvanized sheets of about 5 cents. Having regard to 28 gage only, then, if the respective prices of black and galvanized sheets are properly aligned at the start, the spread should increase 5 cents per 100 pounds for every advance of 40 cents per 100 pounds in spelter, and *vice versa*. Using this factor as a means of comparing the average spread between black and galvanized sheets during the past eight years with the average price of spelter, it is found that a spread of $1 per 100 pounds between black and galvanized sheets corresponds with a spelter price at East St. Louis of about 5c. Sometimes the spread has been relatively too large and sometimes it has been relatively too small, as there have been wide variations from the average. This statement may be taken as correctly stating the precedents when applied to 28 gage, and from it one may readily observe that a spelter price of 6.20c is three of our units of 0.40c above the base rate, calling for three 5-cent unit advances in the spread, so that with this 6.20c spelter one should have a spread of $1.15 between 100 pounds of black sheets and 100 pounds of galvanized, 28 gage. The present market differential is not more than $1.05.

An interesting question is whether the manufacturers of galvanized sheets as a rule recognize this fact. The present state of the market may be due to ignorance of the fact, or inability to make the theory work out in practice. On a miscellaneous specification, of course, the advance in spelter is not so important, for the reason that a smaller quantity is required for coating the average gage than for coating 28 gage. To follow the vagaries of the spelter market precisely, it would be necessary not simply to modify the spread between black and galvanized sheets, 28 gage, but to modify the spreads between different gages of galvanized. The average manufacturer expects the run of specifications to do the equalizing for him. With high priced spelter, he can less well afford to sell 28 gage at the formerly recognized differentials than he can the heavier gages.

The advance in spelter is attributed to unrest among the zinc ore interests, which have been making strenuous efforts to obtain better prices from the smelters. They have even exported considerable tonnages of ore, finding a fairly satisfactory market abroad, on account of the advance in spelter at foreign producing centers.

## Rail Failures Due to Poor Roadbed

Recently a passenger train between Chicago and Indianapolis was wrecked, although fortunately no one was injured. Examination immediately after the wreck showed that a rail over which the train had passed was broken into five pieces. The railroad employes did not fail to take advantage of this opportunity to call attention to the apparently inferior quality of the rail and to convey the impression that the steel maker was ultimately responsible for the accident.

However, there were some other very significant circumstances connected with this wreck which the railroad people did not dwell upon. An examination immediately after the accident showed that several of the ties under the broken rail were rotted to a depth of at least 1½ inches, and were so soft that an ordinary pocket knife could be stuck into the wood the full length of its blade with scarcely any effort. Some of the spikes in the ties were so loose they could be pulled out with the fingers. Several of the ties had been broken off short by the accident. One of these showed a core of sound wood of not over 10 square inches in cross section, equal to about a quarter of the total sectional area of the tie.

It is very evident that the real cause of the wreck was not due to any failure of the rail, but to the fact that the rail had practically no support and was, therefore, subjected to enormous stresses for which it had never been designed.

Broken rails have been rather frequent lately and rail makers have been the target for a great deal of criticism. It is not unlikely that a careful investigation of all the recent wrecks attributed to broken rails would indicate that in several cases it was the ties and roadbed which were at fault.

It is well known that many of the railroads of the country have been curtailing their expenses for maintenance for the past two years to the absolute minimum, and it is not at all surprising that in a great many cases the track foundations have been neglected until they are a menace to the safety of every passing train.

Some first class roads are keeping their track up in proper condition. Other lines are not, and in forming opinions about rail failures, the public should remember that breakages are often due to faulty ties, poor ballast, soggy earthwork or other underlying causes which do not appear from a casual inspection.

# Great Northern Ore Lease Will Be Cancelled

## Steel Corporation Decides to Surrender Hill Ore Holdings on Mesabi —Its Lake Superior Railroads Announce Freight Rate Reduction

While a formal statement outlining its intention has not been issued, it is stated on absolute authority that the determination has been reached by the United States Steel Corporation to exercise its option and to abrogate the lease upon those iron ore lands in the Lake Superior district, formerly held in fee or under lease by the Great Northern railroad, which were conveyed to it in 1906 under what has been commonly known as the Great Northern Ore lease.

In addition to the decision to annul the lease, the Steel Corporation will reduce to a flat rate of 60 cents a ton the freight rates for hauling ore from the mines to the head of the lakes charged by its subsidiary railroads in the Lake Superior ore country, the Duluth & Iron Range and the Duluth, Missabe & Northern railroads.

### Lease Burdensome.

The explanation for this proposed abrogation of the Hill ore land lease most generally offered by independent ore interests is that the lease is steadily becoming burdensome and the ore costly, when all taxes, cost of exploratory work strictly prescribed, etc., are added to the steadily advancing royalty and the practically irreducible railroad freight charge, under a certain clause of that instrument.

That the Steel Corporation had determined, as long ago as last winter, upon cancelling the so-called Hill lease had been known for some time and had been made plainer by several coincidences occurring in the early spring and summer and corroborated by the varying figures in the ore statistics this fall.

The signatures to the lease of the Great Northern ore lands were affixed formally on Oct. 5, 1906, in New York City, the final conference being participated in by Judge E. H. Gary, J. J. Hill, J. P. Morgan and a number of attorneys. The lease itself is very voluminous, making a volume about 6 inches thick and containing about 1,000 pages. The contract provided that the royalty should be 85 cents a ton for all ore mined in 1907, with the usual provisions as to grading, the royalty increasing each year thereafter at 3.4 cents a ton, or 4 per cent on the original rate. A minimum of 750,000 tons was to be mined in 1907, which minimum should increase annually by 750,000 tons until the minimum of 8,250,000 tons should be reached, which would be in 1917, when the minimum to be mined would continue at that figure until the exhaustion of the deposits. The sole eventuality contained in the lease providing for its possible cancellation was a clause stating that it could be abrogated only at one time and that was on Jan. 1, 1915, by the Steel Corporation having given notice two years previously. It is this formal notice that the Steel Corporation is about to serve, although under the terms of the contract it need not do so until Jan. 1, 1913.

The larger portion of the Great Northern ore lands had been secured seven years previously to the signing of the lease by the Steel Corporation in 1906 by the purchase of the Wright & Davis timber lands, railroad, etc., extending westward from the present town of Hibbing in the center of the Mesabi range. At the time of the original purchase by Mr. Hill, the Mahoning mine was operating and the Stevenson had been discovered, both being included in the Wright & Davis lands. Further holdings in fee and lease were taken over by Mr. Hill from time to time as explorations were pushed forward, until at the time of the signing of the Steel Corporation lease in 1906 the total included large portions of townships 58 and 59 ranges 18, 19 and 20, and township 57 range 21, the total holdings covering 65,091 acres, of which prior to Dec. 7, 1906, others had leased 1,596 acres. The Great Western Mining Co. lease, executed in August, 1907, covered 39,296 acres, of which there were owned in fee by the Great Northern Ore trustees 19,934 acres; owned in fee jointly with other parties (of which the trustees' portion is 7,915 acres), 15,972 acres and held by lease, 3,390 acres. Of the fee lands referred to, 3,691 acres are owned by the North Star Iron Co., of whose capital stock the trustees hold about 91 per cent. This shows that a large portion of the total Hill holdings had either been retained by him and his associates or had been leased to others than the Steel Corporation. Other ore properties along the new line of the Great Northern and Northern Pacific railroads had been aligned with the Hill interests, so that these railroads had been assured a large freight traffic in ore.

Various estimates had been made of the probable amount of ore embraced by the Hill holdings. Mr. Hill was quoted as estimating the tonnage at between 400,000,000 tons and 500,000,000 tons. The Steel Corporation estimate was about 300,000,000 tons.

### Significant Clause.

The lease signed on Oct. 5, 1906, contained a very significant clause that provided that if for any reason the railroad freight charge from the mines to upper lake ports should be decreased, then the royalty on the ore mined must be increased just as much as the freight charge was reduced. This followed the wording of the contracts between the Carnegie Steel Co. and the Rockefeller interests, then owning large Mesabi range ore holdings. Both contracts contained this provision, it has always been believed, in order to offset any possible action that might be taken by the Minnesota state railroad commission or the Interstate Commerce Commission to reduce the railroad rates to the head of the lakes. Since the Carnegie interests, or rather their successor, the United States Steel Corporation, took over the fee to the Rockefeller ore lands some years ago and thus did away with this freight-carrying charge restriction, the Corporation will now have cut the last cable that tied up indissolubly its ore royalties with freight charges at the head of the lakes.

The Steel Corporation, in order to handle its then newly acquired Hill ore lands, organized the Great Western Mining Co. and guaranteed the performance of its obligations under a contract dated August, 1907. The Great Western company was capitalized at $6,000,000, all common stock, and its offices were established at Duluth.

Mr. Hill, in a circular to Great Northern stockholders, issued in the latter part of 1906, announced the organization of a trusteeship, whereby the benefits accruing through the Steel Corporation lease would be held and paid out. He said that the Great Northern railroad board had authorized the Lake Superior Co., Ltd., which then held the ore land leases for the Great Northern stockholders as the owner of the leases and ore lands known as the Hill holdings, to transfer the properties to three trustees, Louis W. Hill, James N. Hill and Walter J. Hill. The entire beneficial interest of the trust thus created consisted of 1,500,000 shares, each shareholder in the Great Northern railroad being entitled to one share of the trust. It was provided that at least once a year the trustees should distribute to the shareholders the profits arising out

of the trust, proportioned from receipts for ore actually mined; otherwise the money remained in the trustees' hands until the proportion was determined.

Under the terms of the lease, the United States Steel Corporation had to pay for all exploratory and development work, even the number of drills that must be kept at work being specified. Thus in their report for 1908 the Great Northern Ore trustees said: "Exploration of the properties leased to it has been prosecuted with vigor by the Great Western Mining Co., with continued satisfactory results. A monthly average of 77 drills has been maintained, as against the 40 required by the terms of the lease. Exploration work has been completed on about 3,600 acres of the leased lands. . . . We are permitted by the Great Western Mining Co. to state that the expenditures for exploration and for development work on the leased properties have aggregated more than $3,000,000." Since that time the Steel Corporation has more than doubled the amount expended, having constructed the huge ore washer at Coleraine and completed building of sidings, etc. One interesting question growing out of the proposed lease cancellation relates to the ultimate ownership of these permanent improvements.

### Shipments to Others.

The Steel Corporation took out very little ore under the Great Northern lease in 1907, 1908 and 1909, but shipments in quantity had been made in these years to others, as the following figures show:

| | | |
|---|---|---|
| Shipped in 1907 | 3,281,061 | tons |
| Shipped in 1908 | 1,468,925 | tons |
| Shipped in 1909 | 3,016,619 | tons |
| Shipped in 1910 | 5,470,270 | tons |

That the ore trust had been profitable during those years, even including the "lean year" of 1908, is shown by the following statements taken from the annual reports of the trustees, being the amounts of dividends distributed to holders of ore certificates:

| | |
|---|---|
| Paid in 1907 | $1,500,000 |
| Paid in 1908 | 1,500,000 |
| Paid in 1909 | 1,500,000 |
| Paid in 1910 | 2,250,000 |
| Total disbursed | $6,750,000 |

Great Northern Ore certificates have fluctuated on the New York stock market widely, in common with iron and steel shares generally. The highest price quoted was 85 in 1907, and the lowest price was 37 in the same year. Last week the certificates declined a number of points, closing Saturday at 41¾.

That the Steel Corporation had determined upon the lease cancellation as long ago as last winter has been made plain by several coincidences. One is found in the heavily increased ore shipments for this year up to Oct. 1 over the Great Northern, or Hill, railroad into Superior, Wis., which is its only Lake Superior ore terminal. Increased shipments of such magnitude can only be planned months ahead. The Great Northern railroad up to Oct. 1 this year has handled 43.2 per cent of the total shipments of 18,177,758 tons from the Mesabi range mines, as compared with 25.8 per cent of the total of 25,106,744 tons shipped up to Oct. 1 in 1910. In the meantime, this year, up to Oct. 1, the Duluth shipments have been cut in half, while Two Harbors shipments have been reduced 1,900,000 tons, as compared with shipments last year. This shows that the ore mining and steamship departments of the Corporation had determined at the opening of navigation this year to bring down a far larger proportion of Great Northern ore and thus reduce its obligation under the lease as rapidly as possible. While at the same time conserving its own mines and maintaining its mining organization, the Corporation evidently did not propose to ship more ore than it usually requires for its normal blast furnace operation. The shipments over the Hill railroad from the Mesabi mines into Superior compare as follows with the total Mesabi shipments:

| Year to Oct. 1. | Hill per cent. | Total, tons, to Oct. 1. |
|---|---|---|
| 1911 | 43.2 | 18,177,758 |
| 1910 | 25.8 | 25,106,744 |
| 1909 | 22.3 | 21,235,216 |
| 1908 | 18.5 | 12,232,515 |
| 1907 | 26.5 | 21,021,309 |
| 1906 | 23.2 | 19,123,919 |

### Discuss Cancellation.

Judge Gary, in the course of his testimony before the congressional committee, on June 7, discussing in answer to questions the proportions of ownership of Mesabi ore lands, said:

*"I think if the Hill ores are to be retained by us, which is a question not yet settled by a good deal, our percentage in that district would be more than that (meaning 50 per cent)—something more."*

When Commissioner of Corporations Herbert Knox Smith was being examined before the committee, on July 20, as to the Hill ore lease, Mr. Lindabury, of counsel for the Steel Corporation, said:

*"One of the points about it, to which attention has already been called, is that it is terminable by the company at a short date. I guess it will be terminated."*

### Claimed Rates Excessive.

Interesting as bearing upon the question of what the independent ore consumers thought of the rates of freight from mines in the Mesabi range to upper lake ports, are the following extracts from the testimony of Chairman John A. Topping, of the Republic Iron & Steel Co., before the congressional committee, on Aug. 3:

The Chairman—I will ask you to state what advice you have been given by your traffic manager, whose business it is to investigate these things, and what information you have as to the price charged per ton-mile for that class of freight, generally?

Mr. Topping—Mr. Chairman, I would answer that question in this general way: Our traffic manager is of the opinion that the rates are all too high.

The Chairman—How much too high?

Mr. Topping—I am not prepared to answer that.

Mr. Young—Does that apply to all the roads?

Mr. Topping—To all the roads from all the districts up there.

Again Mr. Topping answered in reply to questions:

Inferentially, as I have just stated, based on the services rendered in the south, and the fact that these rates have been in effect for a great many years without change, there should be a reduction in view of the fact that the density of traffic has unquestionably grown enormously, and the published returns of profits earned by those roads would all suggest that there is too much profit being paid for the services rendered.

Mr. Topping again answered as follows to questions respecting the Mesabi range rates:

We think that we are adversely affected by excessive rates, and the position of the Pittsburgh district, as a whole, today, in my opinion, will demand some investigation and revision of those rates, if it is equitable to claim them, on account of the great growth of production in the Chicago district, the increased developments south, the changes incident to the reduction or practical removal of the duty on iron ore in the east, and the development of such business as the Lackawanna Steel and the Bethlehem Steel companies. So that the condition of the Pittsburgh and Youngstown districts today, as compared to what it was when those districts that I have just mentioned were undeveloped, is vastly different; and it seems to me that the changed conditions, in view of the large earning power of the properties which are now engaged in the transportation of the raw material in the Pittsburgh district would call for some adjustment, otherwise Pittsburgh is in some danger of being shriveled up by competition, unless relief is granted.

### What Mr. Hill Thinks.

James J. Hill, chairman of the Great Northern railroad, said when asked in St. Paul the other day:

"Do you think that the United States Steel Corporation can afford to let up on the Great Northern properties, after the big sums spent by it in developments?"

"If they can afford to do so, we certainly can," he replied. "Now, I don't want to talk about it," he said. "If the Steel Corporation wants to cancel its

lease, that's its privilege. The ore is there—the stuff to make steel of."

"What will you do if the lease is cancelled? Will you operate the mines and sell the ore in the open market?"

"We are not going to cross any bridges until we come to the river. We are not going to say what we are going to do," he replied with a twinkle in his eyes. Then, as he turned to his desk, he added as an afterthought:

"Outside of our properties, the Steel Corporation has not enough ore to run it for 25 years."

### Flat Rate Named.

The actual reduction in iron ore rates will be announced by the two ore-carrying railroads of the Steel Corporation on the Mesabi and Vermillion ranges within the next month or six weeks. The new tariff sheets are being prepared for filing with the Minnesota railroad commission at St. Paul and with the Interstate Commerce Commission at Washington. These formal rate schedules will be filed within a few days, and the proposed new rates will take effect 30 days thereafter.

The reduction will not only be a sweeping one, from 80 cents a ton to 60 cents, but the new rate will be a flat rate from all points on the Mesabi and Vermillion ranges to all upper lake ports. Up to this time the rate has been 80 cents a gross ton from all Mesabi range points, but from Tower, on the Vermillion range, the rate has been 90 cents to Two Harbors, and from Ely, on the same range, it has been $1. Now from all these points the flat rate of 60 cents will prevail. The reduction in rates from Ely will, therefore, amount to 40 per cent, from Tower 33-1/3 per cent, and from all Mesabi range points 25 per cent.

President W. A. McGonagle, of the Duluth, Missabe & Northern railroad, has announced the proposed freight reductions, the announcement having been later confirmed by President F. E. House, of the Duluth & Iron Range railroad. Concerning the new rate, President McGonagle is quoted as saying:

"The change has been carefully considered by our directors for some time and they have decided that it is the right thing to do to reduce the rates at this time."

A 65-cent rate is now in effect on the Soo line, which carries ore from the recently opened Cayuna range to Superior, Wis., with a further provision for a 60-cent rate effective any time that total shipments exceed 2,000,000 tons annually.

### What Railroads Did.

An interesting sidelight on the reason why the higher rates have so long prevailed on the Mesabi ranges is thrown by the testimony given before the congressional investigating committee, June 13, by James Gayley, formerly first vice president of the United States Steel Corporation, having especially in charge ore operations. In reply to questions, he said:

The work that they do is different from any other roads that I know of, except those engaged in a similar line of work. These roads are different from any other roads in this country. They operate about seven months in the year. They take the ore from the mines, and those ores—in what we call in Minnesota the steam shovel mines—the steam shovel goes along and cuts a swath of ore. That ore varies from time to time in grade, and as it varies in grade it varies in its adaptability for furnace, and it varies in its value, and it is very important to have these ores separated according to the grades. Over on the older ranges in Michigan, this grading is all done in the mining. In these open-pit mines (on the Mesabi) that is not done by the mining companies. They do no grading or sorting or stock-piling. They simply dig the ore out of the ground and place it on the railroad company's cars and the railroad company takes that ore to the docks, and very often it is compelled to replace for a long period of time the work that the mining company ordinarily does in stock-piling its ore. It provides a stock-pile on wheels or on the docks for the grades of ore as mined by these mining companies. In some cases, they have held ore from three to four weeks in order that enough of a certain grade could be accumulated from an individual mine to make a vessel cargo. That ore cannot be distributed over the railroad, its cars, or its docks only in cargo lots, and this work of practically grading the ore and holding those grades in stock pile is a work I know of no other railroad doing.

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**Federal Corporation Tax.**—In a decision recently rendered by the commissioner of internal revenue and promulgated in the treasury decisions, emphasis is placed upon the language of section 38 of the present tariff act, which has been construed by the attorney general to mean that corporations having a net income of $5,000 or less are not exempt from the requirement of law that a return of annual net income be made to the collector of internal revenue for the district in which such corporation has its principal place of business.

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**Has Michigan Agency.**—The Domhoff & Joyce Co., which has been the sole representative of the Stonega Coke & Coal Co., in the exclusive sale of its foundry coke in the central western territory, has been awarded the exclusive selling agency for all Michigan territory, so that now it is the sole western representative of Stonega and Roda foundry cokes.

## HONOR TO DUD DUDLEY

### Memorial to the Founder of the Staffordshire Iron Trade.

On Saturday, Oct. 7, a number of members of the Staffordshire Iron and Steel Institute journeyed to the ancient city of Worcester to take part in the unveiling of the restored monument to Dud Dudley, (son of Edward, Lord Dudley) who, in the seventeenth century, invented and was first to put into practice an efficient method of smelting iron and coal. The monument erected to the memory of Dud Dudley and his wife is on the south wall in St. Helen's church, which is the mother church of the city, having been founded in A. D 680. Dud Dudley died in 1684, and was buried in the church with his wife, beneath the memorial tablet. The monument had fallen into decay, and the Staffordshire Iron and Steel Institute, in view of the enormous industry in which its members are interested, and of which Dud Dudley may be considered the founder, took upon itself the restoration. With the aid of J. W. Willis Bund, chairman of the Worcestershire county court, who is a famous archaeologist, and of Walter Harris, one of the church wardens, the mutilated inscription was deciphered and the restoration has been handsomely carried out. The old plastered stone has been replaced by slabs of Silician marble with Caen stone moldings, of which material the Dudley coat of arms at the top is also composed. The monument, which is entirely mural, has a height of about 9 feet, and the lowest of the three inscribed panels has a length of 8 feet. A short service was conducted by the Rev. C. Chaytor, rector of the parish, and the memorial was unveiled by the president of the institute (Isaac E. Lester) in the presence of the members and a goodly number of the citizens of Worcester, in which city Dud Dudley for some time resided, and which he assisted in fortifying during the civil war, providing it and other royalist strongholds with cannon and cannon balls from his ironworks near Dudley. After the unveiling, Willis Bund delivered an address on the life and work of Dud Dudley, and it will appear in the proceedings of the institute.

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The machinery of the old Fairmount waterworks, Philadelphia, was sold recently by the city to R. S. Wark, as follows: Cast and wrought iron and steel, $6.51 a ton; brass, babbitt and composition, 18½ cents a pound; six complete pumping engine units, $515.

## HILL ORE LEASE

**Discussed by the Bureau of Corporations—Full Report Issued.**

Commissioner Herbert Knox Smith, of the bureau of corporations, has just issued the complete text of Part I of his report on the steel industry, a summary of which was given to the public more than three months ago. The report itself is very much more complete than the preliminary summary and deals at great length with the conditions of the steel industry during the period just before the formation of the United States Steel Corporation. Then the report turns to financial aspects of the latter concern and questions of valuation, finally taking up the income sheet of the Corporation and discussing its form at considerable length. In this connection, interesting conclusions are offered with reference to the profits of the Steel company and their source.

Many pages are devoted to the ore holdings of the Corporation. The report says that the average royalty in leases made since 1907 is under 40 cents per ton. It then discusses the lease of the Hill ore lands, saying in part:

The question, therefore, arises as to why the Steel Corporation entered into this lease under the onerous conditions noted. The only reasonable explanation which the bureau has found for this unusual transaction is that it was designed to prevent this ore from falling into the hands of competitors of the Corporation. Had this ore been sold or leased in small parcels to a large number of independent producers, this might have tended to depress the price of ore as well as to foster competition in the manufacture of iron and steel. On the other hand, if these ore lands were simply held by the Great Northern interests without development, this would leave the opportunity open for the organization of a very important rival to the Steel Corporation. At this time, however, the Steel Corporation was the only concern in the iron and steel business which was in a position to consider the acquisition of these Hill ore lands in a single block. By securing control of these enormous reserves the Steel Corporation obviously strengthened its control of the ore industry and at the same time put substantial obstacles in the way of further competition in the iron and steel industry.

The Steel Corporation specifically denies that this lease was intended thus to head off competition, and, instead, contends that it was desired merely in order to strengthen the Corporation's ore reserves. At the time this lease was entered into, however, the Corporation had fully 30 years' supply (and perhaps a 50 years' supply) of ore under its control. Had this Hill ore been acquired at a bargain price, an obvious reason for its acquisition would be furnished; but in view of the extraordinarily high rate of royalty at which this ore was taken over and the other onerous conditions in the lease, particularly the high minimum tonnage stipulated, the only reasonable explanation, in the opinion of the bureau, is that the Corporation chiefly desired to forestall competition. The high royalty named in this lease, therefore, instead of being proof of a marked appreciation in ore values, is rather an indication of the extent to which the Steel Corporation was ready to go in order to prevent this ore from falling into the hands of rival interests.

In view of the exceptionally high royalties stipulated in this lease, it is hardly surprising that the Steel Corporation did not claim, in its appraisal of 1907, above discussed, any value for this lease in the schedule of its assets.

## Reading Iron Co. Pays Dividend

Reading, Pa., Oct. 22.—In the year 1909-10 the Reading Railroad Co.'s receipts were swollen by $1,153,146, the profit made by the sale of its holdings of Lehigh Valley stock. This could not be repeated last year, but on June 30, the final day of the fiscal year, the Reading Iron Co. paid as an extra dividend to the Reading company the sum of $1,000,000. The Reading company owns just $1,000,000 of Reading Iron stock and the extra dividend amounted to 100 per cent. The Reading Iron Co. owns nearly one-quarter of the preferred stock of the Pennsylvania Steel Co., and in 1909-10 it invested $925,100 in purchasing new preferred stock of the steel company.

## Succeeds His Father

Charles G. Gates was elected a director of the Republic Iron & Steel Co. to succeed his father, the late John W. Gates, at the annual meeting of the stockholders of the company held at Jersey City, Wednesday, Oct. 18. The other three retiring directors were re-elected as follows: Harry Brenner, E. J. Berwind and Grant B. Schley. Only routine business was considered at the meeting.

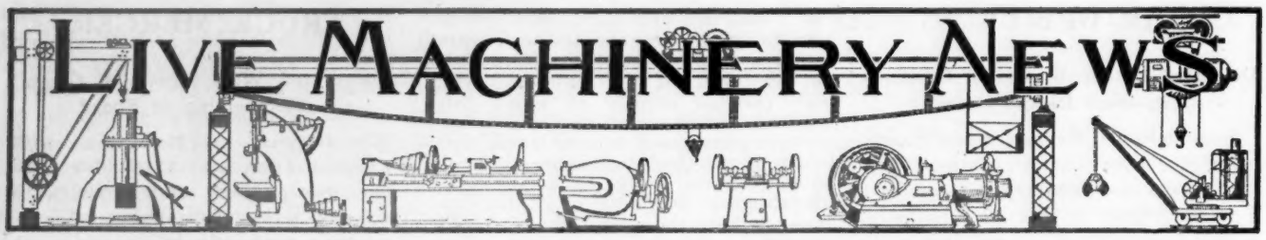
**Strikers Replaced.**—Only 13 per cent of the places held by strikers before the recent walkout at the Southern Pacific railroad shops, at Oakland, Cal., remain to be filled, and all the work necessary is being turned out on time. Very little trouble of any kind is being encountered, as most of the strikers have left the city or taken other positions.

## TRUCK MERGER

**Incorporated With $10,000,000 Capital—Membership of Board.**

The International Motor Co., with a capitalization of $10,000,000, has been incorporated under Delaware laws to conduct the commercial management of the Saurer motor truck plant, at Plainfield, N. J., and the Mack Bros. works, at Allentown, Pa. The new company is formed to sell the product and to furnish the service, inspection and maintenance of the two trucks manufactured. The two plants, with the combined output of 2,000 trucks, will be continued as distinct organizations. The general offices of the company will be at 30 Church street, New York. The officers and directors of the International Motor Co. are as follows: President, C. P. Coleman; chairman of board, W. D. Sargent; vice president, J. M. Mack; treasurer, F. C. Richardson; secretary, Vernon Monroe. The directors are, Otis H. Cutler, president American Brake Shoe & Foundry Co.; Frederick H. Eaton, president American Car & Foundry Co.; Benjamin Strong Jr., vice president Bankers' Trust Co.; Arthur H. Lockett, Pomroy Bros., bankers; Hunter Marston, Blair & Co., bankers; Chas. H. Sabin, vice president Guaranty Trust Co.; Geo. B. Case, White & Case, attorneys; Wm. G. Pearce, vice president American Brake Shoe & Foundry Co.; C. P. Coleman, president of the Saurer Motor Co.; W. D. Sargent, president Reading Steel Casting Co.; Herbert H. Dean, of Edward B. Smith & Co., bankers; John M. Mack, president Mack Bros.' Motor Car Co., Allentown, Pa.; Joseph S. Mack, vice president Mack Bros.' Motor Car Co.; Montgomery Hare, attorney; Thomas E. Rush, attorney; Warren A. Wilbur, president E. P. Wilbur Trust Co.; Harry W. Davis, secretary Delaware Trust Co.

**Paid the Fine.**—John S. Kaiser, president of the Phoenix Horseshoe Co., of Illinois, entered a plea of nolo contendere in the United States circuit court at New York, Oct. 20, on an indictment charging him with the violation of the Sherman anti-trust act through membership in the Horseshoe Manufacturers' Association. He was fined $1,000, which he paid. This is one of the last few cases of the numerous indictments returned several months ago in New York against manufacturers of wire products and allied lines for membership in various pools which influenced their business operations.




## Machine Tools

Patrick J. Kelly will construct a brick machine shop at 92 Madison street, Newark, N. J.

The Ellwood City Forge Co., Ellwood City, Pa., is arranging for the installation of another cold saw and some special machinery.

It is said that the General Motors Co., 1733 Broadway, New York, has prepared a list of equipment that will be placed shortly for the Long Island City plant. A representative of the company has stated that an agreement has been reached as to the number and make of tools to be bought, and that the business will be placed as soon as it is approved by the finance committee.

The clerk of the board of education, Cleveland, will receive bids until Oct. 30, delivery no later than Nov. 15, for the following machine tools:

One or more engine lathes, 14 inches x 6 feet; direct current, variable speed motor driven; compound rest taper attachment, power cross feed and belt feed; 220 volt.

One or more engine lathes, 14 inches x 6 feet; cone drive; belt feed, or gear feed with shearing pin; compound rests; taper attachment; power cross feed.

One or more plain milling machines; cone driven; each machine to be fitted with a dividing head; one only, universal vertical milling attachment for spiral cutting, to be furnished with these machines.

## Power Plant Equipment

Montezuma, Ind., has voted to build a municipal electric lighting plant.

The city of Three Rivers, Que., has decided in favor of the establishment of an electric street railway service.

Aberdeen, Wash., contemplates the erection of a municipal electric lighting plant.

Jasper Bowens, Whitesburg, Ky., is promoting the construction of an electric light plant.

Chapman, Kas., has voted to issue $25,000 worth of bonds for the construction of an electric light plant.

The Valley Ice Co. is to install a large pumping plant at Calwa, Cal. W. E. Jeller is manager.

The Rio Plata Mining Co., Santa Barbara, Chihuahua, Mex., will install a large pumping plant.

Winnemucca, Nev., is considering the question of issuing bonds to provide for electric lighting and water systems.

The city of Berlin, Ont., has adopted a bylaw to raise $25,000 for the installation of a new electric lighting system.

The town of St. Mary's, Ont., has voted $15,000 to extend the civic electric system in connection with the provincial hydro-electric service.

Devils Lake, N. D., will decide on Nov. 6 on a bond issue of $33,000 for the construction of an electric lighting plant.

Millville, N. J., will decide on the issuance of bonds for the construction of an electric lighting and heating plant at the November election.

The Indian Valley Electric Light & Power Co., Greenville, Cal., has acquired a power site on the north fork of the Feather river and plans to erect a hydro-electric power plant.

Sheridan, Ind., has sold its municipal lighting plant to a company headed by J. L. Vickery. It is stated by Mr. Vickery that the plant will be equipped with new machinery.

The transcontinental railway commission, Ottawa, Can., is calling for tenders until Nov. 8, for boilers and boiler-room equipment to be installed in the engine houses of the Grand Trunk Pacific railway as follows: 150-horsepower, horizontal, return tubular boilers at Napadogan, N. B.; 150-horsepower, horizontal, return tubular boilers at Edmundston, N. B., and 150-horsepower, horizontal, return tubular boilers at Cochrane, Ont.

## New Construction

The Cossitt Co., of Brockville, Ont., is building a two-story addition to its scale manufacturing department.

The Wheeling Metal Mfg. Co., Moundsville, W. Va., will erect a new building for manufacturing purposes.

Plans have been prepared for an addition to the brick factory building of Max Hertz, 68-100 Oliver street, New York City. The estimated cost is $10,000.

The V. T. Grabs Co., King, N. C., will erect a two-story building, 54 x 76 feet, to be used for manufacturing portable saw mills, etc.

The Wheeling Corrugating Co., Wheeling, W. Va., is reported to be planning to erect a new building at a cost of from $50,000 to $100,000.

The Peacock Iron Works, Selma, Ala., is reported to be considering the establishment of a plant in Attalla, Ala.

The National Iron Foundry & Supply Co., Williamsport, Pa., will commence the erection of a plant at Oneida, N. Y., this fall.

The Industrial Works, Bay City, Mich., will erect a machine shop, 125 x 350 feet, which will cost about $200,000.

The Iron City Foundry Co., Lebanon, Pa., contemplates the erection of a foundry. Several additional buildings will also be erected.

The American Brake Lever Co., Floyd, Va., recently incorporated with $15,000 capital, will establish a plant to manufacture brakes for vehicles. The plans are not yet completed.

The Busch-Sulzer Bros. Diesel Engine Co., St. Louis, has not yet completed plans for a new plant. The company has selected the site however. Adolphus Busch is president.

The Harriman Mfg. Co., Harriman, Tenn., will purchase foundry equipment and will repair the foundry recently damaged by fire. The loss was about $7,000.

Representatives of the Universal Electric Mfg. Co. have inspected a site at Butler, Pa., for a new plant for the manufacture of electric motors, etc.

Col. S. T. Lewis, president of the Eclipse Oil Works, Franklin, Pa., announces that plans are being prepared for the rebuilding of the building destroyed by fire Oct. 13.

The Lester Agricultural Chemical Works, Lister avenue and Joseph street, Newark, N. J., has taken out a permit to construct a reinforced concrete storehouse, to cost $18,000.

The Massey-Harris Co., Toronto, agricultural implement manufacturer, has purchased a site at Swift Current, Man., for the erection of a large distributing warehouse.

The Burwill Works, Ltd., Brockville, Ont., has awarded a contract for the erection of a substantial addition to its factory for the manufacture of cream separators, etc.

Plans are being prepared by the Asbestos Protected Metal Co., Beaver Falls, Pa., for the erection of a building to contain a boiler house, forge

room and storage room. The structure will be 50 x 150 feet.

It has been announced that the factory of the Chadakin Boat Co., Celeron, N. Y., which was badly damaged by fire, Oct. 4, will be rebuilt at an early date. The fire caused a loss of $35,000.

A company has been organized by August Miller, J. E. Bixler and Daniel Laughlin to engage in the manufacture of nails in the buildings formerly occupied by the Glenn Mfg. Co., Ellwood City, Pa.

The M. E. Blazier Machine Co., Utica, N. Y., manufacturer of pressing and steaming apparatus, will establish an assembling plant at Niagara Falls, Ont., for the supply of the Canadian trade.

The Ohio Steel & Wire Co., Warren, O., will erect a building, 80 x 300 feet, one story, for which bids are now being received. Henry & Murphy, Doyle building, Akron, O., prepared the plans.

The American Cigar Machine Co., recently incorporated by Richard A. Bright, Richard H. Hogan and Edward H. Hughlett, all of Baltimore, is reported to be preparing to erect a 300 x 300-foot one-story plant in that city.

Brown Douglas, O. L. Bishop and R. H. Crank, Cleburne, Tex., are the organizers of a company recently formed to manufacture automobiles. All the stock in the company has now been sold and manufacturing operations begun.

The recently incorporated Great Northern Mfg. Co., Rochester, N. Y., will establish a factory for the manufacture of moving picture machinery. The company has a capital of $100,000, and is represented by A. S. Knight, Rochester.

A one-story building, 100 x 240 feet, will be erected at Cambridge City, Ind., by the Bertsch Foundry & Machine Co. Plans are being prepared by Bert L. Baldwin & Co., Cincinnati. The building will be used as a machine shop.

Application for a charter for the Fireproof Interiors Co. will be made Oct. 31. The incorporators are F. S. Fish, L. M. Bartleson and C. F. Kaufolz, of West Middlesex, Pa. The company will engage in the manufacture of fireproofing material.

A contract has been awarded to the John Eichley Jr. Co., Pittsburgh, by W. D. Hager, Pittsburgh, for the erection of a building, 50 x 150 feet, at Paden City, W. Va., to be used for the manufacture of slate for washstands and sanitary appliances.

The citizens of Clinton, Ont., adopted a by-law on Oct. 16, under which the town will sell a partially equipped plant and give a fixed assessment to the Clinton Motor Car Co., which will engage in the manufacture of motor vehicles.

Joseph Kennedy, architect, Harrison, N. J., has prepared and filed plans for a factory and office building to be constructed for the Bloomfield Chemical Co., Cleveland and Passaic avenues, Newark. The buildings will be constructed of concrete blocks at Somerset and Third streets.

The Grant - Lees Machine Co., Quincy avenue, Cleveland, which has increased its capital from $200,000 to $400,000, plans to make a number of improvements and extensions to its plant. Some new machinery will possibly be needed, according to G. B. Collings, president of the company.

The new plant of the Oklahoma Iron Works, Tulsa, Okla., is nearly completed and will be in operation in about two weeks. It consists of three buildings, foundry, blacksmith shop and office building. The present plant, on East First street, will be used as a machine shop.

The Commercial Motor Truck Co., 828 Broad street, Newark, N. J., has been incorporated with $125,000 capital, to manufacture motor trucks. William Dimond, John True and W. Eugene Thurton, all of Newark, are the incorporators. The company intends to establish a plant in the vicinity of that place.

The contract has been let for the steel structural material for the addition to the plant of Gilbert & Barker, manufacturers of gas appliances, West Springfield, Mass. The main building will be 63 x 105 feet, two stories. Other buildings will include: A sheet metal building, 160 x 250 feet, one story; furnace building, 83 x 120 feet, one story, and power house, 52 x 90 feet

The Milwaukee Concrete Mixer & Machinery Co., 283 Clinton street, Milwaukee, Wis., which recently was reorganized, is considering the erection of a new plant. The business has increased remarkably and the present facilities are entirely inadequate. The proposed new plant will entail an expenditure of $50,000 and will enable the company to manufacture all parts of the mixers and concrete machinery.

George F. Mitchell & Son, 1279 West Third street, Cleveland, have let a contract for the erection of a new, two-story and basement plant, 80 x 200 feet at Cedar avenue and East Sixty-third street, that city. No equipment will be moved from the old to the new plant. The new equipment, which has not yet been purchased, includes spot welders, power shears, screw presses and a full line of die equipment. The concern manufactures brass and iron sheet parts for automobiles, etc.

## Miscellaneous

Fallon, Nev., will soon advertise for bids for the construction of a water system.

The general contract for the waterworks for the borough of Conway, Pa., to cost $20,000, has been awarded to R. D. Hunter, Beaver, Pa.

The capital stock of the Republic Rubber Co., Youngstown, has been increased by $1,000,000, part of which will be used for additions to the present plant.

The Canadian General Electric Co., Toronto, has obtained the contract for machinery for the civic electric plant to be installed at Portage la Prairie, Man. The contract for engines has been let to the Goldie McCulloch Co., Galt, Ont.

Plans have been prepared for the enlargement of the McKeesport, Pa., water system, including new mains, new machinery and new individual lines in keeping with the filtration plant completed some time ago. Engineer Lee Hutson is in charge.

The Louisville Railway Co., Louisville, has purchased two Babcock & Wilcox boilers, capacity 600 horsepower, which are now being installed. A coal conveying system of the Meade-Morrison type has also been purchased. It has a capacity of 40 tons per hour.

Bids have gone in on a power house, one 115-horsepower boiler, a steam-driven air compressor, two air receivers, one feed water heater, water pump, piping, etc., for dam No. 19 along the Ohio river, and awards will be made within the next week by the United States engineers, at Wheeling, W. Va.

The board of public works, San Francisco, has awarded the following contracts: Laundry plant for city and county hospital, Troy Laundry Machinery Co., $14,994; ice plant, Vulcan Iron Works, $13,389; steam, gas and water piping, Central Electric Plumbing and Heating Co., $19,450; sterilizers for power house and laundry, Speck Mfg. Co., $3,400; disinfectors, John G. Sutton Co., $1,580.

The Hartman Machine & Boiler Works, Green Bay, Wis., is experiencing an exceptionally busy season. The works have just completed seven large tanks for the Standard Oil Co. for the Green Bay station and a 173-foot stack, 4 feet in diameter, for

the Cargill Elevator Co. A large lot of new equipment has just been purchased, including a large steam hammer from the Niles-Bement-Pond Co. All of the machinery in the works will be driven by individual electric motors.

Henry J. Nelson, formerly of the Hartman-Nelson-Zapfke Co., machinist, Green Bay, Wis., who is preparing to open a machine shop in the former plant of the Fox River Soap Co., at Green Bay, has purchased the building and machinery of the defunct Deane Mfg. Co., Seymour, Wis., and will move the machinery and equipment, consisting of gas engines, boilers, machine shop and woodworking machinery, to Green Bay. The Deane buildings have already been sold by Mr. Nelson to Miller & Sedo, Seymour, who will use them for coal dock and warehouse purposes. The purchase fills most of Mr. Nelson's requirements and he will purchase only a small lot of miscellaneous equipment for his new works.

## Government News

The commanding officer of the Rock Island arsenal, Ill., is calling for bids, to be opened at 2 p. m., Nov. 17, for the construction of a filtration plant, with a capacity of 1,500,000 gallons in 24 hours. The work includes a settling basin, a pump room, and three filter units of 500,000 gallons daily capacity each; also a clear well and building structure, all the necessary valves and pipes, automatic devices for proportional feed of chemical to the water, a wash water pump for cleaning the filters, a pump for taking the water from the clear well with its necessary connections to deliver water at rate of 1,500,000 gallons in 24 hours, two pumps for fire protection, all pumps to be operated by direct-connected motors and rigged complete with necessary piping and valves. The power equipment will include transformers, switchboards, panels, conduits and a lighting service, together with the required wiring. Plans and specifications may be had upon application to the commanding officer.

Bids were opened Oct. 17, by the Panama canal commission, under circular 653-A, for two motor-driven centrifugal pumps, as follows: Alberger Pump Co., New York; a, $5,769; b, $5,700; 165 days for both. American Well Works, Aurora, Ill.; a, $5,300, 160 days; b, $5,500, 94 days; c, $5,770, 160 days; d, $5,600, 94 days. Blackall & Baldwin Co., New York: $4,651,103 days. Camden Iron Works, Camden, N. J.; $5,700, 75 days. De Laval Steam Turbine Co., Trenton, N. J.; a, $5,570; b, $5,900, 160 days for both. Manning, Maxwell & Moore, New York; a, $5,788.20; b, $6,134.70; 90 days for both. Platt Iron Works Co., Dayton, O.; a, $5,700; b, $6,040, 100 days for both. Watson-Stillman Co., New York; a, $5,820, 145 days; b, $5,820, 115 days. Henry R. Worthington, New York; a, $6,226, 77 to 91 days; b, $5,557, 109 days; c, $5,678, 109 days. Westinghouse Electric & Mfg. Co., Washington, D. C.; a, $4,994; b, $5,495; c, $5,289, 90 to 100 days for all.

The isthmian canal commission has awarded contracts for furnishing materials and supplies, delivered at the isthmus, as follows:

Circular 627, opened May 27, gate-moving machinery and motors, Allis-Chalmers Co., Milwaukee, $3,000.

The bureau of supplies and accounts, navy department, has awarded contracts for furnishing materials and supplies, delivered at the points specified, to contractors named below, at the prices stated:

**Opening of Sept. 5.**

Schedule 3803, Class 5, Mare Island, Cal., one screw-cutting, back-geared, motor-driven tool-room lathe, Springfield Machine Tool Co., Springfield, O., $1,133.

Class 6, Mare Island, one back-geared, motor-driven extension gap lathe, 25 by 39 inches, Manning, Maxwell & Moore, New York, $1,725.

**Opening of Sept. 12.**

Schedule 3878, Class 121, Brooklyn, four 30-horsepower induction motors, complete, with oil-immersed auto starters, Westinghouse Electric & Engineering Co., Washington, $2,077.68.

Schedule 3883, class 63, Portsmouth, N. H., 12 pneumatic drilling machines, Independent Pneumatic Tool Co., Chicago, $528.

Class 164, do., 6 corner pneumatic drilling machines, same, $405.

Class 165, do., 2 corner pneumatic drilling machines, Dunlop Engineering Co., Columbus, O., $60.

**Opening of Sept. 19.**

Schedule 3888, class 141, Brooklyn, 18 electric motors, canceled.

The navy department, Washington, D. C., opened bids under schedule 3954, class 118, on Oct. 17, for 20 lower hoist controllers, for installation at Brooklyn and Newport News, as follows: Cutler Hammer Mfg. Co., Milwaukee, $7,022 and $9,790; Otis Elevator Co., New York, $15,000; General Electric Co., Schenectady, N. Y., $15,312 and $12,116.

## Foreign Ore Trade

That little Spanish ore is being bought at this time by British pig iron makers for next year's delivery is shown by the following from The Ironmonger, Oct. 14: "Rubio is firm at 19s 6d per ton, c. i. f., Middlesbrough, for this year's delivery, and the price is tending upward consequent upon the advance in freights. For next year there has been little business done so far, but Bilbao mine owners are very firm, and there does not appear to be much prospect of lower prices."

## TAKE OVER MILLS

### Of Louisville Bolt & Iron Co.—Other New Concerns Formed.

Indianapolis, Oct. 23.—A company has been organized under the name of the Louisville Steel & Iron Co. to take over the holdings of George H. Holzbog, of Jeffersonville, in the Louisville Bolt & Iron Co., of Louisville. The new concern is incorporated with an authorized capitalization of $400,000, the directors and principal stockholders being William T. Verdigan, Elias D. Salsbury, Randolph T. Wedding, Lawrence A. Wiles and Ernest M. Sherburne. The principal offices of the company are to be in this city, the company being incorporated under Indiana laws.

Radiators, coolers and similar articles are to be manufactured by the Laporte Radiator Co., articles of incorporation for which have just been filed with the secretary of state in this city. The company will conduct a factory at Laporte and is incorporated with an authorized capitalization of $100,000, directors being Aloysius J. Rumley, Emmet Scott and Vance P. Wilkins.

Congressman Charles A. Korbly is among the directors and incorporators of the Indiana Gas Engine Co., which has just been organized and will manufacture gas engines in this city. The company has a capitalization of $25,000. Other directors are G. G. Westerfield, 207 West South street; I. W. Connaty, S. S. Brewer and Bernard Korbly. It is reported the company will take over the manufacture of the gas engines which have been manufactured by Mr. Westerfield for a number of years.

The grand lodge of Red Men has received plans for a 12-story hotel, which it is proposed to erect in this city some time next year. The proposed structure is to be of brick, steel and stone construction and will cost about $600,000. A building committee has been appointed with full power to act in the matter. The grand lodge offices are in the Indiana Trust Co. building in this city.

The International Association of Machinists, according to the biennial report of the president, paid $585,400.29 for strike benefits from July 1, 1909, to June 30, 1911. They paid, from April 1, 1891, to June 30, 1911, $2,410,405.19 for strike benefits.

The date of the annual meeting of the Crucible Steel Co. of America has been changed from the third Wednesday in October to the third Wednesday in November.

(In order to assist the post office in delivering letters to new concerns, it is suggested that the names of incorporators be written in the lower left hand part of every envelope addressed to such new companies.)

## New Buyers

The following manufacturing companies have filed articles of incorporation:

The Erie Pump & Engine Works, Erie, Pa.; $50,000; by J. G. Pradt, Milton W. Shreve and D. H. Dumond.

The Kloswove Fence & Mfg. Co., Metropolis, Ill.; $2,400; by C. E. Trovillion, R. Matthews and J. T. Kimball.

The Standard Gas Engine Co., Milwaukee; $25,000; by Edward Cheshire, Arthur E. Welch and Charles H. Welch.

The Clive Arms & Mfg. Co., Los Angeles; $250,000; to manufacture rifles and guns; by president, Albert A. Clive.

The Tacoma Aeroplane Co., Tacoma, Wash.; $50,000; to manufacture aeroplanes; by James Anderson and W. F. Longmire.

The Laughlin Barney Machine Co., Pittsburgh; $50,000; by C. W. Laughlin, Paul S. Ache and R. E. Barney, all of Pittsburgh.

The Virginia Metal Products Corporation, Roanoke, Va.; $150,000; to manufacture culverts, etc.; by president, J. B. Botts.

The Rifle Mfg. Co., Valparaiso, Ind.; $100,000; to manufacture washing machinery; by W. W. Rifle, Kimpton Ellis and H. B. McCoy.

The B. F. Board Motor Truck Co., Alexandria, Va.; $100,000; to manufacture auto trucks; by B. F. Board, T. C. Smith, W. E. Bau, etc.

The Electrographic Display Co., Phoenix, Ariz.; $250,000; to manufacture a patented writing machine; by I. B. Wood and A. H. Green.

The Huffman Traction Engine Co., Leipsic, O.; $50,000; by S. H. Huffman, W. H. Huffman, J. S. McLean, O. R. Huffman and G. S. Huffman.

The American Lawn Tool Co., Canton, O.; $10,000; to manufacture garden and lawn tools; by A. L. Ricker, John T. Blake, John Lilly, etc.

The Indiana Gas Engine Co., Indianapolis; $25,000; by directors, G. G. Westerfield, J. W. Connaty, S. S. Brewer, Bernard Korbly and C. A. Korbly.

The Gray Specialty Co., Newark, N. J.; $125,000; to manufacture automobile supplies; by Edward Gray, Edward Gray Jr., and Theodore F. N. Gray.

The United States Smelting & Refining Co., Troy, Okla.; $300,000; by W. R. Smith, Ravia; J. T. Knighten, Troy, and T. A. Burnett, Madill.

Dickert Throttle & Lever Co., Macon, Ga.; $35,000; to manufacture locomotive safety device; by C. L. Dickert, C. W. Rice and W. A. Chapman.

Richmond Stay-Bolt Drilling Machine Mfg. Co., Richmond, Va.; $25,000; by president, L. L. Scherer; vice president, James D. Patton, secretary and treasurer, Samuel Cohe.

The Myers Loading Machine Co., Buffalo; $100,000; to manufacture machinery, etc.; by Geo. F. Myers, Wm. S. Harrison and John K. Kerr, all of Buffalo.

The Air Line Mfg. Co., Lancaster, O.; $5,000; to manufacture shears, razors and hardware; by Frank E. Wilson, George W. Moss, W. E. Shradach, etc.

The Sunset Co., Newark, N. J.; $50,000; to build electrical machinery; by Charles D. Winters, K. Benjamin Glauckfield, John Beckingham and others, all of Newark.

The Cincinnati Patent Pulley Mfg. Co., Cincinnati; $10,000; by Emil W. Kottusch, Adolph A. Gruber, John H. Bischof, Arthur F. Kauffman and George Berghausen.

The Toronto Electrotype & Stereotype Co., Ltd., Toronto; $400,000; by provisional directors, Robert C. Elder, John H. Huddleston, John S. Elder and others.

The Pemco, Ltd., Toronto; $100,000; to manufacture electrical vehicles and appliances; by provisional directors, Robert McKay, Andrew Dods, Mervil McDonald and others.

The New Jersey Automobile & Supply Co., Camden, N. J.; $125,000; to manufacture and sell automobiles, etc.; by H. Morgan Hatch, J. R. Mick and W. B. Walcott.

The American Jewelry Co., Boston; $100,000; to manufacture tools and machinery used on jewels; by Clarence A. Backer and Louis A. Wheeler, 53 State street, Boston.

The Specialty Mfg. Co., Greenfield, Ind.; $20,000; to manufacture stamp-vending machines, meat slicers, etc.; by Geo. W. Davis, C. M. Curry, E. J. Binford, etc.

The Great Northern Mfg. Co., Rochester, N. Y.; $100,000; to manufacture motion picture machiney; by George A. Wood, H. A. Wood, A. S. Knight, all of Rochester.

The Canada Hardware, Ltd., Toronto; $50,000; to manufacture machinery and hardware; by provisional directors, John F. McGregor, Edward G. McMillan, Harry Riley and others.

The Acme Fireless Cooker Co., Quincy, Ill.; $15,000; to manufacture iron and sheet metal products; by Sidney P. Sanderaft, Joseph W. Wall, H. M. Sheer and Harry A. Snow.

The Bellhouse Flange Lubricator Co., Stockton, Cal.; $25,000; to manufacture a patented flange lubricator for use on railroads; by Clarence A. Grant and I. W. Morris.

The Peerless Gear Tester Mfg. Co., Cleveland; $50 000; to manufacture gear testers for automobiles and gear machines; by R. L. Ford, W. Hoyt, A. W. Kilbourne and others.

The Coshocton Steel Ware Co., Coshocton, O.; $50,000; to manufacture all kinds of tinned, galvanized and enameled ware; by Glenn O. Boyd, C. R. Speckman, William E. Hunt, etc.

The Eberling Cement Tile Machine Co., Cleveland; $10,000; to manufacture machinery for the manufacture of clay products; by C. M. Eberling, R. E. Davis, C. G. Blearsdale, etc.

The Electrical Signal & Engineering Co., Alliance, O.; $20,000; to manufacture electrical signals and electrical and mechanical devices; by D. C. Schultz, Richard Jones, F. T. Cope, etc.

The H. O. Craven Mfg. Co., Schenectady, N. Y.; $50,000; to manufacture carburetors for gasoline engines, etc.; by Horace O. Craven, Joseph A. Field, Geo. W. Donnan, all of Schenectady.

The Calloway Engine & Improvement Co., Jonesboro, La.; to operate

a foundry and machine shop and to manufacture the Calloway engine, boilers, etc.; by G. W. Sadler, A. C. Thomas, B. F. Blumdell and others.

The Thermodyne Engine Co., Manhattan, New York City; $30,000; to manufacture machinery, engines, etc.; by Wm. Esson, 161 West 105th street; W. H. Fritchman and L. T. Fetzer, 44 Pine street, all of New York City.

The Hoosier Sales Co., Jamestown, N. Y.; $150,000; to manufacture electrical goods, etc.; by Frank L. Wyman, Indianapolis, Ind.; Scott H. Penfield, Jamestown, and Benj. S. Dean, 609 East Eighth street, Jamestown.

The Electric Ad-Lite Co., Manhattan, New York City; $10,000; to manufacture electrical and mechanical devices; by Joseph G. Kanter, Benj. F. Kanter and Frank V. Daniels, all of 32 Union square, New York City.

The H. V. Lewis Co., Manhattan, New York City; $20,000; to manufacture machinery, etc.; by Geo. C. Hughes, Cranford, N. J.; Arthur H. Valiquette, 836 West End avenue, New York City, and Howard V. Lewis, Plainfield, N. J.

The Atlantic Vehicle Co., Manhattan, New York City; $10,000; to manufacture motor vehicles; by Philip A. Carroll, 22 East Forty-seventh street; Joseph F. Dempsey and Eugene A. Donohue, 59 Wall street, all of New York City.

The Louisville Steel & Iron Co., Indianapolis; $400,000; to take over the business of the new Louisville Bolt & Iron Co., of Louisville, Ky.; by directors, W. T. Verigan, E. D. Salsbury, R. T. Wedding, L. A. Wiles and E. M. Sherburne.

The Regent Talking Machine Co., Manhattan, New York City; $400,000; to manufacture talking machines, etc.; by Thomas G. Dorey, 863 East 168th street, Bronx; Jacques Cahn, 232 East Sixty-ninth street, and Chas. W. Fernald, Fanwood, N. J.

The Continental Latch Needle Co., Manhattan, New York City; $20,000; to manufacture knitting machinery; by Edward W. S. Jasper, Elizabeth, N. J.; John T. Stebe, 1157 Gates avenue, Brooklyn, and John St. Helens, 335 West Twenty-fourth street, New York City.

The Hyde Park Mfg. Co., Hyde Park, Berks county, Pa.; $45,000; to manufacture all kinds of machinery, ball bearing trip hammers, etc.; by directors, Abraham Schlegel, Muhlenberg, Pa.; Adam H. Schmeck, Reading, Pa.; Charles H. Madeira, Muhlenberg, Pa.; treasurer, J. Wallace Miller, Muhlenberg.

## General Industrial

The American Rotary Valve Co., Chicago, has increased its capital stock from $500,000 to $750,000.

The Milwaukee Concrete Mixer & Machinery Co., Milwaukee, has filed an amendment to increase its capital stock from $25,000 to $60,000.

The Richmond Stove Co., Richmond, Va., advises that the recent fire at its plant was of little consequence and that the damage has been repaired.

The Harriman Mfg. Co., Harriman, Tenn., is rapidly rebuilding that part of its plant recently damaged by fire, and is making it thoroughly standard. No new equipment will be needed.

The Reading Hardware Co., Reading, Pa., advises that its recent increase in capital stock was made to enable it to purchase several additional plants at Reading.

Frederick C. Roberts & Co., of San Francisco, has been awarded the contract for building a steel standpipe for the city of Porterville, Cal., for $4,500, which will be 30 feet high and 45 feet in diameter.

The Corry Metal Furniture Co., Corry, Pa., advises that it has increased its capital stock from $50,000 to $100,000 for the general improvement of its business.

The Standard Pressed Steel Co., Philadelphia, advises that its recent increase in capital stock was made to care for its rapidly increasing business in pressed steel shaft hangers, steel shaft collars and kindred lines.

The Henry Vogt Machine Co., Louisville, is completing the equipment of its new forging department, having purchased about all of the machinery needed. Other departments have been enlarged.

The Petroleum Iron Works Co., Sharon, Pa., recently closed a contract for the construction of a penstock at Jonqueire, Province of Quebec, Can., which will be one mile long, 12 feet in diameter and from 1-2 to 5-16 inches thick. The contract price is approximately $200,000.

The United States Air Brake Release Co. has been incorporated in Montgomery, Ala., to manufacture a patented air brake, a suitable factory to be erected in the near future. The new concern is capitalized at $6,000, with the following officers: President, Walter Moore; vice president, M. J. Powell; secretary and treasurer, S. R. Bentley.

The Pennsylvania Stove & Range Co., Spring City, Pa., recently incorporated, has purchased the plant and equipment of the Yaeger-Hunter Spring City Stove Works, of that place, and is manufacturing the full line of products formerly produced by that company. The new incorporators are Allen W. Urner, Horace K. Thomas and William P. Miles.

The West Bend Aluminum Co., West Bend, Wis., recently incorporated with a capital stock of $30,000, has leased the Pick factory building at that place and has purchased new equipment. The product will be all kinds of aluminum products. The incorporators are Andrew J. Pick and Wentworth Bros., of Two Rivers, Wis., and Martin Walter, B. C. Ziegler and S. F. Mayer, of West Bend

The United States Assay & Refining Co., composed of George W. Mark, former United States assayer at St. Louis, and others, has applied for a Missouri charter to do a business in refining ores and mineral products. The capital stock is $7,000. The United States assay office at St. Louis was recently closed, and Mark decided to establish an assay and refining business in the city.

The new plant of the Oklahoma Iron Works, Tulsa, Okla., is nearly completed and will be in operation in about two weeks. It consists of three new buildings, namely, the foundry, blacksmith shop and office building, all of which are modern and fully equipped. The plant will be located on East Archer street, east of the Midland Valley railroad tracks. The present plant, which is on East First street, will be used as a machine shop after the new buildings are occupied.

The new plant of the Ironton Punch & Shear Works, at Ironton, O., which has succeeded the Cincinnati Punch & Shear Works, of Cincinnati, and the Olive Foundry, of Ironton, is nearly completed and will be in full operation in a short time. It includes the plants of the Cincinnati company and the Olive foundry, with many alterations and additions. Besides the line of machinery formerly manufactured by the Cincinnati Punch & Shear Co., the new plant will also manufacture power metal working machinery.

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## Trade Notes

The general offices of the Monongahela River Consolidated Coal & Coke Co., which has been merged with the Pittsburgh Coal Co., will be moved from Water street to the Oliver building.